COUNSELS AND IDEALS

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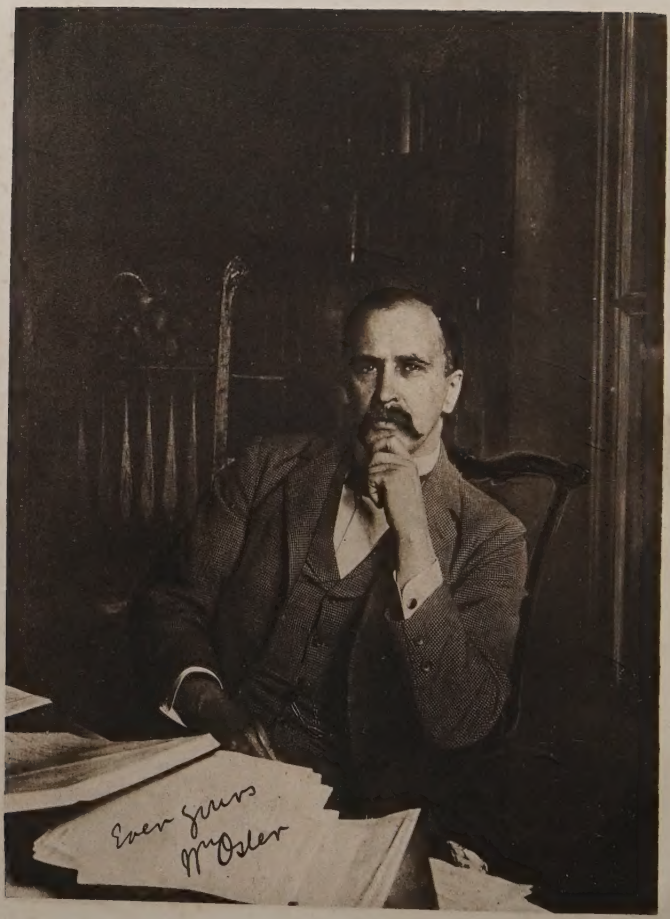
Ever yours
Wm Osler

COUNSELS AND IDEALS

FROM THE WRITINGS OF

WILLIAM OSLER

SECOND EDITION

HUMPHREY MILFORD
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DEDICATED

TO

GRACE REVERE OSLER

AND

TO THE MEMORY OF

EDWARD REVERE OSLER

FIRST EDITION . . *December* 1905

Second Impression . . *December* 1905
Third ,, . . *March* 1906
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SECOND EDITION . . *January* 1921

FIRST EDITION

IT is now generally recognized that an important, very important, part of education, academic, technical, and professional, is the *personal influence* of the teacher upon the taught. Be the building, the laboratory, the equipment ever so perfect, there yet must be this essential, *personal contact between teacher and pupil.*

From personal association of teacher and pupil follows that much talked of and sought for element *atmosphere.* With an atmosphere an institution becomes a seat of learning, at which both teacher and taught gain knowledge, and establish principles of thought and conduct, and to which they return eager to breathe again its 'inspiration.'

Such is the history of the Dutch, French, and English Schools, whose power may be traced to the *individual influence* of the Masters of the Italian School. Close upon these, indeed almost contemporaneous, follow the German and Austrian Schools, and out of all these that composite product the American School. In these Morgagni, Valsalva, Morgan, Louis, Rush, Virchow, to mention a very few only, were the 'apostles' through whom this 'succession' of influence passed.

Scientific institutions have been tardy in recognizing the importance of this power of influence, which the artistic world has long considered its corner-stone. In art or science, genius alone is able to flourish on the *Geist* from within.

For my own purposes, in order to renew from time to time the influence which, as pupils and *internes*, we had come to depend upon, I have for some years made extracts from Dr. Osler's Lectures and Addresses*. I would like to share the benefits of these with others. At Oxford, during the summer of 1905, 'Counsels and Ideals' under his guidance took definite form.

Those who know his personal influence, those in and out of our profession to whose 'unmeaning taskwork' in their 'brazen prison' he has shown a way to

'escape . . . and depart
On the wide Ocean of life anew,'

will welcome these pilot sayings to help grasp 'the rudder hard' and to see

'How fair a lot to fill
Is left to each man still.'

C. N. B. Camac.

New York City, 1905.

* All of Dr. Osler's writings, including the seventeen collected Addresses entitled *Aequanimitas*, have been consulted. Forty-seven have been extracted for the present volume.

FOURTH IMPRESSION

THAT the purpose of this book has been fulfilled is evidenced by the way in which it has been received.

Within a month of the date on which the first issue appeared the publishers advised a second impression; and within four months of that date still another impression was called for. It is now not quite two years since the book appeared, and a fourth impression is considered advisable.

That it is in the hands of so many is a source of keen satisfaction; this knowledge has removed whatever element of task there may have been in arranging the book.

Each year sees a new lot of workers issuing from our medical and training schools. For these the same questions and problems which confronted those who have gone before must arise. Except in the occasional friendly talk, such questions and problems are untreated in our modern medical curriculum.

'Treat the patient, but don't forget his human side' is the sentiment of the administrators of the

great Virchow Hospital, on the entrance-arch to which this motto is to be placed. Following this thought we may say: Train the student, but don't forget the man—don't forget the struggles with poverty and self—the problems of getting on—how to bear success—how to face disappointment—in short, the human side of the training. It is because this volume deals faithfully with what makes all the world akin that it has been sought, and it is in order that those just going into the fields of activity may find this book at hand that the advice of the publishers to issue a fourth impression is, with Dr. Osler's consent, followed.

I wish to thank Mr. Frowde and the Messrs. Hart of the Oxford Press, and Messrs. Houghton and Mifflin of the Riverside Press, for their interest and courteous treatment throughout.

C. N. B. C.

New York City,
September, 1907.

SECOND EDITION

The earnest Scientist sows seeds, the fruit of which he himself may never behold.*—(Alliterated translation.)

Tilling the Soil and Training the Husbandmen.

RESEARCHERS in science, working in a world of superstitious belief and arm-chair philosophy, rarely gather the fruit of their labour. To the author of the extracts which appear in this volume it was, however, vouchsafed to an unprecedented degree to see the seeds of his sowing bring forth 'some a hundredfold, some sixtyfold, some thirtyfold.' He, too, found the ground stony, shallow, thorny, and threatened by the fowls of dogma and theory, but by persistent cultivation and untiring guardianship he made the ground 'good.' So rich a harvest was his because his life was spent, not in reaping but in tilling the soil and training the husbandmen.

The results of his work of TRAINING: its historical importance.

This work of Sir William Osler, in the development of American and British medical science, is of great historic importance. By its ever-widening and multiplying influence, as others caught his spirit, medicine, in the brief space of half a century, has become an integral part of the economic system of these two great nations. To-day in laboratories, in quarantine stations, in Health Departments, in Municipal and

* 'Arbores seret diligens agricola, quarum aspiciet baccam ipse numquam.'—CICERO'S *Tusculanian Disputations*, i. 14. 31.

Military Hospitals, in institutions for mental and nervous diseases, in the industrial world, in abattoirs, in the study of food and drugs, and of disease in animals, and of disease-carrying parasites, and in sanitary legislation . . . on through a long list, the expert physician is labouring to prevent disease and to better the health of the community.

What brought about this widespread activity?

How such important and wide-spread an activity should have developed in so short a time may well be inquired into.

Experimental medicine, emancipated from the romance of pure theory by such men as Harvey, Laennec, and Jenner, emerged in the nineteenth century to be championed by Virchow, Claude Bernard, Pasteur, Koch, and Lister. Yet these geniuses were working alone. The struggle of Pasteur and Lister, with their generation, forms a pathetic chapter in the history of medicine. The ground was not 'good.' Dogmatism and sophistry were common and even permitted in the debates of learned societies.* Searching observation and accurately interpreted experiment were peculiar to a few master minds, and their laboratories were oases in a desert of theory.

Osler's life work.

The work of the leaders in medicine in the latter part of the nineteenth century was to train observers and experimenters who should imbibe in their earlier years the spirit and teaching of those master minds, and whose ardour would carry this spirit and teaching into many fields.

* See Pasteur's debates on 'Spontaneous Generation' as recorded in Radot's *Life of Pasteur*.

This is the work to which Osler devoted his life and for which he wished most to be remembered.

The biographies of the men mentioned record the brilliant achievements accomplished, through many and unnecessary difficulties, by those isolated workers, and with their death the work to a large extent ceased. Osler's achievement was the establishing of *a system of training* in school and laboratory by which men found themselves, and the master mind, so often unassertive and retiring, was discovered and encouraged.

The greatest heritage yet bequeathed to science.

Can the ever-broadening confines of such a system be determined? If his work be compared with the achievements bequeathed by individual workers, it outranks any heritage yet left to science. His own summary of the result of this training is expressed by the following:

'We are better prepared to-day; and a great discovery . . . is *immediately put to the test by experts in many lands and a verdict is given in a few months.*' *

Osler's life influence.

Yet there had been schools with their masters and followers since the days of Hippocrates. What was the influence in the life of this master that 'turned the common thoughts of life into gold' and 'changed a 50 horse-power man into one of 100 or more'? The secret was *human sympathy* scattered through his every dealing with his fellows. Never was the cause or the institution allowed to be a ladder by which the indolent and incompetent might climb, but a far-reaching charity made for 'Peace, Unity, and

* Italics not in original.

Concord' through which the efficiency of his man-building system exceeded any yet devised.

There are Master Builders 'who fear the younger generation knocking at their door.' Such are a stench in the nostrils. There are those, too, who will scoff at sympathy as a factor in great undertakings, but so long as they reject this delicate adjuster of human relations their output will be incomplete or defective.

Purpose of this volume.

Through his writings was this work largely carried on and the influence spread. To the schools falls the task of carrying on his system of training men, but by his writings alone can this 'saving salt of human sympathy be scattered,' and that these Extracts have served this purpose is shown by the publisher's record of four impressions of the first edition. The first edition of this book having been arranged in association with the author of these quotations, it was with some hesitation that the thought of a new edition, to be compiled without his help, was entertained. It was, however, learned that Sir William had advised, during his final illness, that it would be well to bring out another edition. This message seemed to be of the nature of a commission, in fulfilling which the solitariness of the task was modified by the happy memories of the summer of 1905 when, in Oxford, the material for the first edition was gathered.

First edition out of print.

In 1918 the book went out of print on account of the loss, by submarine, of a consignment for the American market. First hand copies of the first edition are therefore not now obtainable.

In preparing this edition many addresses published by the author since 1905 have been read, from twenty-six of which passages have been extracted. A striking feature in the voluminous writings on a great variety of subjects by Sir William Osler is the compact completeness of the Extracts, independent of the context. It is this feature, found in a peculiar type of author, that made this volume possible and that first suggested to the compiler, many years ago, the making of a 'mosaic,' to use Sir William Osler's own term, of his writings.

Compact completeness of each extract.

Of his literary style one finds, in addition to the epigram, an element of surprise. Climax and apt quotation sustain the interest, so that even in the scientific writings he never becomes either 'nicely tasteless or correctly dull,' and there are always 'sentences with a burr to stick in one's memory.'

His literary style.

The Extracts regarding typhoid fever are given somewhat fully, as they represent the final opinion of the author who fought the disease for many years and aroused the profession, the public, and the municipal authorities to the danger of that dread malady.

His work on Typhoid Fever.

As advised in the first edition, the originals should be read, for they will be found replete with many references, quotations, and additional material which were reluctantly excluded because of the limitations of this volume.

The original articles should be read.

It will be profitable and interesting to compare the writings prior to 1905 with those subsequent to that date. In the former we find the Master Builder as draughtsman, outlining and planning. In the latter

Comparison of writings before and after 1905.

writings we see the constructed and finished building, but with the builder's evolutionary spirit encouraging to still greater and higher achievements.

For valuable aid in selecting extracts I am indebted to Mr. Leonard L. Mackall.

C. N. B. C.

New York City, 1921.

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Note.—Each extract has a numerical reference to the original. By following these numbers through, all the extracts from one source may be gathered. It is strongly urged however, whenever possible, to get the original and read it throughout.

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Baltimore
May 15th.

Dear Camac

It would be quite agreeable to me to have a booklet made of extracts from my writings — if you can find material enough!

In the teacher I have always valued the message of the life above the message of the pen, but if you think a mosaic of scraps from my addresses &c would be of any service to young men please do what you think about it

Sincerely yours
Wm Osler

EXEMPLARY CHARACTERS IN MEDICINE

BIBLIOMANIACS, CHERISHERS OF BIOGRAPHICAL RECORDS

The men I speak of (bibliomaniacs) keep alive in us an interest in the great men of the past, and not alone in their works, which they cherish, but in their lives, which they emulate. They would remind us continually that in the records of no other profession is there to be found so large a number of men who have combined intellectual pre-eminence with nobility of character.[1]

John Locke (1632–1704): character of;

Among the great men of the seventeenth century not one has more enduring claims to our grateful remembrance than John Locke—philosopher, philanthropist, and physician. As a philosopher his praise is in the colleges. As the apostle of common sense he may be ranked with Socrates and a few others who have brought philosophy from the clouds to the working-day world. Of his special virtues and qualifications as the typical English philosopher nothing need be said, but were there time I would fain dwell upon his character as a philanthropist—in the truest sense of the word. The author of the *Epistle on Toleration*, the *Treatise on Education*, and the *Constitution of Carolina*, the man who pleaded for 'absolute Liberty, just and true Liberty, equal and impartial Liberty,' the man who wrote the memorable words, 'All men are naturally in a state of freedom, also of equality,' must be ranked as one of the greatest benefactors of the race.[1]

his influence.

For each one of us there is still 'a touch divine' in the life and writings of John Locke. A singularly attractive personality, with a sweet reasonableness of temper and a charming freedom from flaws and defects of character, he is an author whom, liking at the first acquaintance, we soon love as a friend. Perhaps the greatest, certainly, as Professor Fowler says, the most characteristic English philosopher, we may claim Dr. Locke as a bright ornament of our profession, not so much for what he did in it, as for the methods which he

inculcated, and the influence which he exercised upon the English Hippocrates. He has a higher claim as a really great benefactor of humanity, one of the few who, as was so finely said of Isocrates, 'reflected the human spirit always on the nobler side.' One of Locke's earliest writings was a translation for Lady Shaftesbury of Pierre Nicole's *Essays*, in one of which, on the 'Way of Preserving Peace with Men,' Locke seems to have found a rule of life which I commend to you: 'Live the best life you can, but live it so as not to give needless offence to others; do all you can to avoid the vices, follies, and weaknesses of your neighbours, but take no needless offence at their divergences from your ideal.'[1]

♁

Jonathan Hutchinson.

You have been fortunate in having associated with your college (Medical Graduate College and Polyclinic, England) a man with a truly Hunterian mind. In the broad scope of his work, in the untiring zeal with which he has studied the natural phenomena of disease, in his love for specimens and collections, Mr. Jonathan Hutchinson bears a strong likeness to the immortal Hunter. No individual contributor in this country has made so many careful observations upon so many diseases. He is the only great generalized specialist which the profession has produced, and his works are a storehouse upon which the surgeon, the physician, the neurologist, the dermatologist, and other specialists freely draw. When anything turns up which is anomalous or peculiar, anything upon which the textbooks are

silent and the systems and cyclopaedias are dumb, I tell my students to turn to the volumes of Mr. Hutchinson's *Archives of Surgery*, as if it is not mentioned in them, it surely is something very much out of the common. It is very fortunate that his collection will be kept together, as it will be of great service to students from all parts of the world. In one respect it is unique, pictorial and clinical, not anatomical and pathological, and it will remain a worthy monument to the zeal and perseverance of a remarkable man, a man who has secured the homage of a larger number of clinical workers than any Englishman of his generation.[2]

Sydenham (1624–89): scepticism in Medicine.

Sydenham was called 'a man of many doubts,' and therein lay the secret of his great strength.[4]

Linacre (1460–1524).

Linacre, as Dr. Payne remarks, 'was possessed from his youth till his death by the enthusiasm of learning. He was an idealist devoted to objects which the world thought of little use.' Painstaking, accurate, critical, hypercritical perhaps, he remains to-day the chief literary representative of British Medicine. Neither in Britain nor in greater Britain have we maintained the place in the world of letters created for us by Linacre's noble start.[4]

The man and his opportunity.

Come with me for a few minutes on a lovely June day in 1822, to what was then far-off northern wilds, to the island of Michilimackinac, where the waters of Lake Michigan and Lake Huron unite,

and where stands Fort Mackinac, rich in the memories of Indian and *voyageur*, one of the four important posts on the upper lakes in the days when the rose and the fleur-de-lys strove for the mastery of the western world. Here the noble Marquette laboured for his Lord, and here beneath the chapel of St. Ignace they laid his bones to rest. Here the intrepid La Salle, the brave Tonty, and the resolute Du Luht had halted in their wild wanderings. Its palisades and block-houses had echoed the war-whoops of Ojibwas and Ottawas, of Hurons and Iroquois, and the old fort had been the scene of bloody massacres and hard-fought fights, but at the conclusion of the War of 1812, after two centuries of struggle, peace settled at last on the island. The fort was occupied by United States troops, who kept the Indians in check and did general police duty on the frontier, and the place had become a rendezvous for Indians and *voyageurs* in the employ of the American Fur Company. On this bright spring morning the village presented an animated scene. The annual return tide to the trading-post was in full course, and the beach was thronged with canoes and batteaux laden with the pelts of the winter's hunt. *Voyageurs* and Indians, men, women, and children, with here and there a few soldiers, made up a motley crowd. Suddenly from the company's store there is a loud report of a gun, and amid the confusion and excitement the rumour spreads of an accident, and there is a hurrying of messengers to the barracks for a doctor. In a few minutes

(Beaumont says twenty-five or thirty, an eye-witness says three) an alert-looking man in the uniform of a U. S. army surgeon made his way through the crowd and was at the side of a young French-Canadian who had been wounded by the discharge of a gun, and with a composure bred of an exceptional experience of such injuries, prepared to make the examination. Though youthful in appearance, Surgeon Beaumont had seen much service, and at the capture of York and at the investment of Plattsburgh had shown a coolness and bravery under fire which had won him high praise from his superior officers. The man and the opportunity had met—the outcome is my story of this evening.[7]

♂

Visit to Virchow (1821–1902):

In 1884, on returning to Berlin for the first time since my student days, I took with me four choice examples of skulls of British Columbian Indians, knowing well how acceptable they would be. In his room at the Pathological Institute, surrounded by crania and skeletons, and directing his celebrated 'Diener,' who was mending Trojan pottery, I found the professor noting the peculiarities of a set of bones which he had just received from Madeira. Not the warm thanks, nor the cheerful, friendly greeting which he always had for an old student, pleased me half as much as the prompt and decisive identification of the skulls which I had brought, and his rapid sketch of the cranial characters of the North American Indian. The profound expert,

not the dilettante student, has characterized all of his work in this line.[8]

♁

the citizen.

It will be acknowledged that in this country doctors are, as a rule, bad citizens, taking little or no interest in civic, state, or national politics. Let me detain you a moment or two longer to tell of one of us, at least, who, in the midst of absorbing pursuits, has found time to serve his city and his country. For more than twenty years Virchow has sat in the Berlin City Council as an alderman, and to no feature in his extraordinary life does the Berliner point with more justifiable pride. It is a combination of qualities only too rare, when the learned professor can leave his laboratory and take his share in the practical municipal work. How much his colleagues have appreciated his efforts has been shown by his election as Vice-president of the Board; and on the occasion of the celebration in 1881, the Rathaus was not only placed at the disposal of the committee, but the expenses of the decorations, &c., were met by the council; and to-day comes word by cable that he has been presented with the freedom of the city.[8]

♁

William Pepper (1843–98): a strong soul;

In that noble poem *Rugby Chapel*, in memory of his father, Matthew Arnold draws a strong contrast, on the one hand, between the average man, who eddies about, eats and drinks, chatters and loves and hates, and then dies, having striven blindly and achieved nothing; and, on the other, the strong soul tempered with fire, not like the

men of the crowd, but fervent, heroic, and good, the helper and friend of mankind. Dr. William Pepper, whose loss we mourn to-day, while not a Thomas Arnold, belonged to this group of strong souls, our leaders and masters, the men who make progress possible.

There are two great types of leaders: one, the great reformer, the dreamer of dreams with aspirations completely in the van of his generation, lives often in wrath and disputations, passes through fiery ordeals, is misunderstood, and too often despised and rejected by his generation. The other, a very different type, is the leader who sees ahead of his generation, but who has the sense to walk and work in it. While not such a potent element in progress, he lives a happier life, and is more likely to see the fulfilment of his plans. Of this latter type the late Professor of Medicine at the University of Pennsylvania was a notable example—the most notable the profession of this country has offered to the world.[9]

a leader;

♁

a child of fortune;

William Pepper began life under conditions which are very often unfavourable to success. His father, a distinguished physician, the Professor of Medicine in the school in which his son was educated, belonged to a family of position and influence. For the young man there were none of those tempering 'blows of circumstance,' no evil star with which to grapple and grow strong. Quite as much 'grit' and a much harder climb are needed to reach distinction from the top as from the bottom of

the social scale, and to rise superior to the *res abundans domi* has taxed to the uttermost many young men in this country. We have heard enough of the self-made men, who are always on top; it is time now to encourage in America the young fellow who is unhappily born 'with a silver spoon in his mouth.' Like the young man in the Gospels, he is too apt to turn away sorrowfully from the battle of life, and to fritter away his energies in Europe, or to go to the devil in a very ungentlemanly manner, or to become the victim of neurasthenia. To such the career I am about to sketch should prove a stimulus and an encouragement. [9]

In many ways the American is the modern Greek, particularly in that power of thinking and acting, which was the strongest Hellenic characteristic. Born and bred in one of the most conservative of cities, surrounded by men who loved the old order, and who hated change or even the suggestion of it, Pepper displayed from the outset an adaptability and flexibility truly Grecian. He was pre-eminently a man of felicities and facilities, to use a somewhat flash but suitable phrase. Matthew Arnold's comment upon the happy and gracious flexibility which was so incarnate in Pericles has often occurred to me in thinking of the character of the late Provost: 'lucidity of thought, clearness and propriety of language, freedom from prejudice, freedom from stiffness, openness of mind, and amiability of manner.' There was another Grecian feature which must not be lost sight of. You

a modern Greek.

remember in the *Timaeus* how the Egyptian priest said to Solon: 'You Hellenes are never anything but children; there is not an old man among you . . . in mind you are all young.'

To the very last there was a youthful hopefulness and buoyancy of spirits about Pepper that supported him in many trials and troubles. I never knew him despondent or despairing. The persistency of this buoyant hopefulness often wore out the most obstinate opposition; in fact, it was irresistible. Nor was it the hopefulness which we condemn as visionary, but a resourceful hopefulness, based on confidence in himself, and, most valuable quality of all, capable of inspiring confidence in others.[9]

HISTORY AND BIOGRAPHY

VALUE OF BIOGRAPHICAL STUDY

Of the altruistic instincts veneration is not the most highly developed at the present day; but I hold strongly with the statement that it is the sign of a dry age when the great men of the past are held in light esteem.[10]

THE HISTORICAL METHOD

By the historical method alone can many problems in medicine be approached profitably. For example, the student who dates his knowledge of tuberculosis from Koch may have a very correct, but a very incomplete, appreciation of the subject. Within a quarter of a century our libraries will have certain alcoves devoted to the historical consideration of the great diseases, which will give to the student that mental perspective which is so valuable an equipment in life. The past is a good nurse, as Lowell remarks, particularly for the weanlings of the fold.[19]

Value of historical study.

Editions of the Hippocratic writings appear from time to time, and in the revival of the study of the history of medicine the writings of such masters as Galen and Aretaeus reappear, but the interest is scholastic, and amid the multiplicity of studies how can we ask the student to make himself familiar with the ancients? We can, however, approach the consideration of most subjects from an historical standpoint, and the young doctor who thinks that pathology began with Virchow gets about the same erroneous notion as the student who begins the study of American history with the Declaration of Independence.[3]

♂

'In the present crowded state of the curriculum it does not seem desirable to add the "History of Medicine" as a compulsory subject. An attractive course will catch the good men and do them good, but much more valuable is it to train the mind of the student to look at things from the historical standpoint, and this can be done by individual teachers who themselves appreciate the truth of Fuller's remark, "History maketh a young man to be old without either wrinkles or grey hairs; privileging him with the experience of age without either the infirmities or inconveniences thereof. Yea, it not only maketh things past present, but enableth one to make a rational conjecture of things to come. For this world affordeth no new accidents, but in the same sense wherein we call it *a new moon*, which is the old one in another shape; and yet no other than that hath been formerly. Old actions return again, furbished over with some new and different circumstances."'—(*B. M. J.*, 1902.)

For countless generations the prophets and kings of humanity have desired to see the things which men have seen, and to hear the things which men have heard, in the course of this wonderful nineteenth century. To the call of the watchers on the towers of progress there has been the one sad answer—the people sit in darkness and in the shadow of death. Politically, socially, and morally the race has improved, but for the unit, for the individual, there was little hope. Cold philosophy shed a glimmer of light on his path, religion in its various guises illumined his sad heart, but neither availed to lift the curse of suffering from the sin-begotten son of Adam. In the fullness of time, long expected, long delayed, at last science emptied upon him from the horn of Amalthea blessings which cannot be enumerated, blessings which have made the century for ever memorable; and which have followed each other with a rapidity so bewildering that we know not what next to expect.[5]

Science, last and chief blessing.

To us in the medical profession, who deal with this unit (the individual), and measure progress by the law of the greatest happiness to the greatest number, to us whose work is with the sick and suffering, the great boon of this wonderful century, with which no other can be compared, is the fact that the leaves of the tree of science have been for the healing of the nations. Measure as we may the progress of the world—materially, in the advantages of steam, electricity, and other mechanical

The gift of the nineteenth century to mankind.

appliances; sociologically, in the great improvement in the conditions of life; intellectually, in the diffusion of education; morally, in a possibly higher standard of ethics—there is no one measure which can compare with the decrease of physical suffering in man, woman, and child, when stricken by disease or accident. This is the one fact of supreme personal import to every one of us. This is the Promethean gift of the century to man.[5]

♁

The vice of authority.

The fetters of a thousand years in the treatment of fever were shattered by Sydenham, shattered only to be riveted anew. How hard was the battle in this century against the entrenched and stubborn foe! Listen to the eloquent pleadings of Stokes, pleading as did Sydenham, against authority and against the bleedings, the purgings, and sweatings of fifty years ago. 'Though the hair be grey and his authority high, he is but a child in knowledge and his reputation an error. On a level with a child so far as correct appreciation of the great truths of medicine is concerned, he is very different in other respects, his powers of doing mischief are greater; he is far more dangerous. Oh that men would stoop to learn, or at least cease to destroy!'[4]

♁

Weir Mitchell.

Not in vain has he wandered amid green pastures, and by the still waters in the Garden of the Gods, and the Pierian roses which he has gathered have the bloom and much of the fragrance of those which deck the brows of our brother-craftsmen—of Gold-

smith, of Keats, and of Holmes. Heredity has done much, environment has done more, in the career of which I speak. Unlike the majority of those who have 'passed the chair' of this honourable Faculty, the path along which Weir Mitchell trod to fame led around, not through, Academic Halls. When University positions are so coveted, and when the ambition of every worker is to teach, it is a satisfaction to be able to point to a man who has risen from the ranks, so to speak, to the highest generalship and command. But may I allude—if only to show the truth of Schiller's dictum,

> 'Des Lebens ungemischte Freude
> Ward keinem Irdischen zum Theil'—

to disappointed academic ambitions on the part of our distinguished fellow, now long past, perhaps even forgotten by him? Truly the stone which the builders rejected has become the chief stone of the corner. For his sake I have always thought that in so doing they 'builded better than they knew.'

Again; in relation to this college (College of Physicians), around which clusters so large a part of all that is best in the history of the profession of this city (Philadelphia), the man whom we delight to honour has fostered its growth, widened its influence, and stimulated its life. For this we thank him best when we place his portrait in line with those of Redman, Shippen, and Wood.

It is too weird a speculation to think that here to-night in this hall amid the volumes of forgotten

lore, a ghostly procession of our presidents who have gone will pass verdict on this picture and will greet as worthy one who, *caute, caste et probe*, supported the traditions which they held so dear. Amid the racket and hurly-burly few of us have the chance to warm both hands at the fire of life. No member of the profession in his generation, either in America or Europe, has so pleasantly toasted hands and feet before the logs as S. Weir Mitchell; and no one has been more ready to give a brother a place at the glowing hearth. If asked for a scroll to place beneath that frame I would write that he was one

'Whose even balanced soul
Business could not make dull, nor passion wild
Who saw life steadily and saw it whole.'[37]

Charcot (1825–93):

Now and again there is given to medicine a man whose life and work make an enduring impression, and who, escaping the thralls of nationalism, becomes a cosmopolitan teacher and leader. The latter part of this century has had only three or four such men: Lister in Great Britain, Virchow and Koch in Germany, Pasteur in France—men who have

cosmopolitan;

revolutionized medicine by brilliant discoveries and by the introduction of new methods, and who have moulded anew our works and ways, and have widened the horizon of our thoughts. In this select circle by virtue of extraordinary labours, the suffrages of our Guild, the world over, had placed Jean Martin Charcot, whose sudden death on August the 16th last has been so universally deplored.[40]

A feature which helped not a little in Charcot's success was a personality attractive to young men. . . . Charcot's method of teaching was in striking contrast to that of his colleagues at other French hospitals. . . . Half an hour before the lecture the front rows were filled with enthusiastic students, and by the time the lecture began there was standing-room only. Without any attempt at display or effect, interesting cases were brought in, the symptoms analysed, the diagnosis made, the anatomical condition discussed, usually with the aid of black-board and chalks, followed, in conclusion, by a few general comments. It was a clinical lecture in the true sense of the term. Without volubility, Charcot possessed in a marked degree that charming lucidity in the presentation of a subject so characteristic of his countrymen.[40]

attractive personality;

a teacher without attempt at display or effect;

a clinical lecture.

Lucidity without volubility.

♁

A finely tempered individualism, prone though it be to excess, is one of the glories of the French character. The *man* in France stands for more than in any other land; his worth and work are there more truly recognized, and there his relative position in the history of art, literature, or science is more justly gauged. Alone among the nations of the world, France honours duly the mighty dead of our profession. Not in the Pantheon only, but in statues, in the names of streets, and in the names of hospitals one is constantly reminded in Paris that such men as Bichat, Laënnec, Pinel, Trousseau, Broca, Bernard, and others have honourably served their day and generation.[40]

France honours her great men.

William Pepper (1843–98):

The medical profession in every country has produced men of affairs of the first rank, men who have risen high in the councils of nations, but with scarcely any exception the practice of medicine has not been compatible with such duties. So absorbing are the cares of the general practitioner or the successful consultant that he has but little time to mingle in outside affairs, and the few who enter public life do so with many backward glances at the consulting-room, and with well-grounded forebodings of disaster to professional work. But Dr. Pepper maintained to the end the closest relations with the profession, both as a consultant and a teacher. To me one of the most remarkable features of his life is the conscientiousness with which he attended to a large and exacting practice. That amid such multifarious cares and duties he should have been able to maintain an undiminished activity in his calling is perhaps the greatest tribute to his genius. As a teacher his forte was in the amphitheatre, where he displayed precision in diagnosis, great lucidity in the presentation of a complicated case, and a judicious and thorough knowledge of the resources of art.[9]

♁

a cultured Hellene;

The tribute of words has already been paid, but to us, of his circle, two aspects of his character may be dwelt upon for a moment. William Pepper was the embodiment of that happy and gracious flexibility which distinguished the best of the old Greeks. Matthew Arnold's portrayal of the cultured Hellene can be transferred to him with singular appropriate-

ness: 'Lucidity of thought, clearness and propriety of language, freedom from prejudice, freedom from stiffness, openness of mind, and amiability of manner.' The greatest of philosophers has said that a man's nature is best proved, not in the business of life, but in festive intercourse; and at our round table we have all had opportunities of proving how good was the best in the nature of our friend.

For six generations this home of the medical profession in America has never wanted broad-minded representatives whose talents were not restricted within the limits of their art. Such men as Casper Wistar, Rush, Chapman, and Leidy—to mention only typical illustrations—have passed into the history of this city, famous in literature or science, pursuits peculiarly adapted to the retired life of the physician. When the wider field of public service has been sought, it has almost invariably been at the loss of all active interest in medicine. For the first time in this country the medical profession produced in the person of William Pepper a man of affairs of the first rank, whose work as an organizer will compare with the very best, and this at a period of our history when the value of organization had become fully appreciated.

an organizer;

That amid multifarious duties and cares he should have retained to the last an undiminished activity in his calling, is perhaps the greatest tribute to his genius. To his native land and to her sons he gave freely the splendid gifts of his time and energies, but to us, his intimates, he gave of his buoyancy,

undiminished activity to the last.

his hopefulness, and his courage—and they remain to cheer us on the remainder of our way.[30]

♂

The nature-physicians.

We miss now the quickening spirit and the wiser insight that come with work in a wide field; and in the great cities of this country we look in vain among practising physicians for the successor of Jacob Bigelow of Boston, Holmes of Montreal, Barton of Philadelphia, and others—men who maintained in this matter an honourable tradition, whose names live in natural history societies and academies of natural science, in the founding of which they were mainly instrumental.[8]

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Richard Morton (1637-98).

August 22, 1662—Black Bartholomew's Day, as it has been called—brought sadness and sorrow to many English homes. The enforcement of the Act of Uniformity called for subscription to the Thirty-nine Articles, and enforced the use by all clergymen of the Book of Common Prayer. Among those ejected for refusal to subscribe—2,000 in number, it is said—was a young man, aged twenty-five, the Vicar of Kinver, in Staffordshire, Richard Morton by name. The son of a physician, born in 1637, he had been educated at Oxford, where he took the B.A. in 1656-7, became chaplain to his college and took the M.A. in 1659, and in the same year was appointed to the vicarage of Kinver. From the days of St. Luke there have been many instances of what has been called the angelical conjunction of physic and divinity. In the seventeenth century many men could sign *Φιλοθεολογιατρονόμος* after their names, as

did Robert Lovell in his *History of Animals and Minerals* (1661). Following Linacre's example, clerical orders have been taken as a rule by the physician late in life, but Morton, ejected from his living, turned his attention to medicine at a comparatively early age. From Baxter's account, he evidently was a loss to the church. He speaks of him as 'a man of great gravity, calmness, sound principles, of no faction, an excellent preacher, of an upright life.'[11]

In one of Bassett's last letters there is an interesting note about Broussais, who had just finished his course in phrenology:— **Broussais (1772–1838).**

'The pupils of '36 have struck off his head. It is in bronze, a little less than our old Washington and Franklin in wax. Broussais is a genius, and when he entered life he saw that something was to be done, or rather that he must do something, and he seized the science of medicine as a good old doctor would a bottle of lotion, and shook it manfully; France, Germany, all Europe, parts of Asia, and America have felt the agitation. But younger men also feel the necessity of doing something, and they are now endeavouring to quiet the commotion he has raised, and in France they have measurably succeeded. When the giant dies I doubt if he will find a successor—his conquests, like Alexander's, will be divided and then fall into insignificance. He fights well while in the ring against awful odds, for the truth is against him, but some of her brightest geniuses he has put to rout or silence. Time is now about to enter the field, and I have no doubt will place a splendid monument over him, to prevent him from being forgotten.'[12]

Linacre (1460–1524).

Linacre, the type of the literary physician, must ever hold a unique place in the annals of our profession. To him was due in great measure the revival of Greek thought in the sixteenth century in England; and, in the last Harveian oration, Dr. Payne has pointed out his importance as a forerunner of Harvey. He made Greek methods available; through him the art of Hippocrates and the science of Galen became once more the subject of careful, first-hand study.[4]

American medicine.

What would attract us all is the study of the growth of the American mind in medicine since the starting of the colonies. As in a mirror this story is reflected in the literature of which you are the guardians and collectors—in letters, in manuscripts, in pamphlets, in books, and in journals. In the eight generations which have passed, the men who have striven and struggled—men whose lives are best described in the words of St. Paul, 'in journeyings often, in perils of waters, . . . in perils in the city, in perils in the wilderness, in perils in the sea, . . . in weariness and painfulness, in watchings often, in hunger and thirst, in fastings often'—these men, of some of whom I have spoken, have made us what we are. With the irrevocable past into which they have gone lies our future, since our condition is the resultant of forces which, in these generations, have moulded the profession of a new and mighty empire. From the vantage-ground of a young century we can trace in the literature how three great streams of influence—English, French, and

German—have blended into the broad current of American medicine on which we are afloat. Adaptiveness, lucidity, and thoroughness may be said to be the characteristics of the Anglican, Gallic, and Teutonic influences, and it is no small part of your duty to see that these influences, the combination of which gives to medicine on this continent its distinctively eclectic quality, are maintained and extended. [3]

One of the most complicated problems of the first half of the century related to the differentiation of the fevers. The eruptive fevers, measles, scarlet fever, and small-pox, were easily recognized, and the great group of malarial fevers was well known; but there remained the large class of continued fevers, which had been a source of worry and dispute for many generations. [5]

Fevers, differentiation of.

Louis clearly differentiated typhoid fever, and by the work of his American pupils, W. W. Gerhard and Alfred Stillé of Philadelphia, and George Shattuck of Boston, typhus and typhoid fevers were defined as separate and independent affections. [5]

Relapsing fever, yellow fever, dengue, &c., were also distinguished. The work of Graves and Stokes of Dublin, of Jenner and Budd in England, of Drake, Dickson, and Flint in America, supplemented the labours of the French physicians, and by the year 1860 the profession had reached a sure and safe position on the question of the clinical aspects of fevers. [5]

Eryximachus. Nowhere in literature do we have such a charming picture illustrating the position of a cultivated physician in society as that given in Plato's *Dialogues of Eryximachus*, himself the son of a physician, Acumenus. In that most brilliant age the physician was the companion and friend, and in intellectual intercourse the peer, of its choicest spirits.[23]

♂

Evolution. In no way has biological science so widened the thoughts of men as in its application to social problems. That throughout the ages, in the gradual evolution of life, one unceasing purpose runs; that progress comes through unceasing competition, through unceasing selection and rejection; in a word, that evolution is the one great law controlling all living things, 'the one divine event to which the whole creation moves,' this conception has been the great gift of biology to the nineteenth century.[21]

♂

The past. In the continual remembrance of a glorious past individuals and nations find their noblest inspiration.[21]

♂

Tyranny of Democracy. The ideal has been reached, so far as organization is concerned, when the profession elects its own Parliament, to which is committed the control of all matters relating to the licence. The recognition in some form of this democratic principle has been one great means of elevating the standard of medical education, and in a majority of the States of the Union it has secured a minimum period of four years' study, and a State examination for licence to practise. All this is as it should be. But it is high

time that the profession realized the anomaly of eight boards in the Dominion and some scores in the United States. One can condone the iniquity in the latter country more readily than in Canada, in which the boards have existed for a longer period, and where there has been a great uniformity in the medical curriculum. After all these years that a young man, a graduate of Toronto and a registered practitioner in Ontario, cannot practise in the province of Quebec, his own country, without submitting to vexatious penalties of mind and pocket, or that a graduate from Montreal and a registered practitioner of this province cannot go to Manitoba, his own country again, and take up his life's work without additional payments and penalties, is, I maintain, an outrage; it is provincialism run riot. That this pestiferous condition should exist throughout this Dominion and so many States of the Union, illustrates what I have said of the tyranny of democracy, and how great enslavers of liberty its chief proclaimers may be.[23]

Interprovincial and international registration.

My feeling on the subject of international, intercolonial, and interprovincial registration is this—a man who presents evidence of proper training, who is a registered practitioner in his own country, and who brings credentials of good standing at the time of departure, should be welcomed as a brother, treated as such in any country, and registered upon payment of the usual fee. The ungenerous treatment of English physicians in Switzerland, France, and Italy, and the chaotic state of internecine war-

fare existing on this continent, indicate how far a miserable Chauvinism can corrupt the great and gracious ways which should characterize a liberal profession.[23]

♁

Back to the Greeks.

Like everything else that is good and durable in this world, modern medicine is a product of the Greek intellect, and had its origin when that wonderful people created positive or rational science, and no small credit is due to the physician who, as Professor Gomperz remarks (in his chapter, 'On the Age of Enlightenment,' *Greek Thinkers*, vol. i), very early brought to bear the spirit of criticism on the arbitrary and superstitious view of the phenomena of life. If science was ever to acquire 'steady and accurate habits instead of losing itself in a maze of phantasies, it must be by quiet methodical research.' 'It is the undying glory of the school of Cos that it introduced this innovation into the domain of its art, and thus exercised the most beneficial influence on the whole intellectual life of mankind. Fiction to the right! reality to the left! was the battle-cry of this school in the war which it was the first to wage against the excesses and defects of the nature philosophy.' (Gomperz.) The critical sense and sceptical attitude of the Hippocratic school laid the foundation of modern medicine on broad lines, and we owe to it: first, the emancipation of medicine from the shackles of priestcraft and of caste; secondly, the conception of medicine as an art based on accurate observation, and as a science, an integral part of the science

of man and of nature; thirdly, the high moral ideals expressed in that 'most memorable of human documents' (Gomperz), the Hippocratic oath; and fourthly, the conception and realization of medicine as a profession of a cultivated gentleman.[23]

The most distinguishing feature of the scientific medicine of the century (nineteenth) has been the phenomenal results which have followed experimental investigation. While this method of research is not new, since it was introduced by Galen, perfected by Harvey, and carried on by Hunter, it was not until well into the middle of the century that, by the growth of research laboratories, the method exercised a deep influence on progress. The lines of experimental research have sought to determine the functions of the organs in health, the conditions under which perversion of these functions occurs in disease, and the possibility of exercising protective and curative influences on the process of disease.[5]

Experiments in the laboratory.

Not only has experimental science given us clear and accurate data upon the localization of certain functions of the brain, and of the paths of sensory and of motor impulses, but it has opened an entirely new field in the diagnosis and treatment of the diseases of these organs, in certain directions of a most practical nature, enabling us to resort to measures of relief undreamed of even thirty years ago.[5]

The study of physiology and pathology within the past half-century has done more to emancipate

medicine from routine and thraldom of authority than all the work of all the physicians from the days of Hippocrates to Jenner, and we are as yet upon the threshold.[5]

♀

Experiments: clinical.

As clinical observers we study the experiments which Nature makes upon our fellow creatures. These experiments, however, in striking contrast to those of the laboratory, lack exactness, possessing as they do a variability at once a despair and a delight—the despair of those who look for nothing but fixed laws in an art which is still deep in the sloughs of empiricism; the delight of those who find in it an expression of a universal law transcending, even scorning, the petty accuracy of test-tube and balance, the law that in man, 'the measure of all things,' mutability, variability, mobility, are the very marrow of his being.[26]

♀

Laënnec (1781–1826).

The discovery by Laënnec of the art of auscultation, by which, through changes in the normal sound within the chest, various diseases of the heart and lungs could be recognized, gave an immense impetus to clinical research. The art of percussion, discovered by Auenbrugger in the eighteenth century, and reintroduced by Corvisart, contributed not a little to the same. Laënnec's contributions to the study of disease of the lungs, of the heart, and of the abdominal organs really laid the foundation of modern clinical medicine.[5]

♀

Reform in medicine in America.

The reformation which started at Harvard shortly

after 1870 spread over the entire country, and the rapid evolution of the medical school has been one of the most striking phenomena in the history of medicine in the century. University authorities began to appreciate the fact that medicine was a great department of knowledge, to be cultivated as a science and promoted as an art. Wealthy men felt that in no better way could they contribute to the progress of the race than by the establishment of laboratories for the study of disease, and hospitals for the care of the sick poor. The benefactions of Johns Hopkins, of Sims, of Vanderbilt, of Pierpont Morgan, of Strathcona, of Mount-Stephen, of Payne, and of Levi C. Lane and others have placed scientific medicine on a firm basis. [5]

Microscope, the invention of (1671).

With the invention of the microscope we can mark the first positive step towards the goal to-day. A Jesuit priest, Kircher, in 1671, was the first to investigate putrefying meat, milk, and cheese with the crude microscope of his day, and left us indefinite remarks concerning 'very minute living worms' found therein. Four years after Kircher a Dutch linen merchant, Antonius von Leeuwenhoek, by improving the lenses of the microscope, saw in rain-water, putrefying fluids, intestinal contents, and saliva, minute, moving, living particles, which he called 'animalculae.' In medical circles of his day these observations aroused the keenest interest, and the theory that these 'animalculae' might be the cause of all disease was eagerly discussed. Plenciz, of Vienna, after much observation of various

fluids, putrefying and otherwise, wrote, in 1762, that it was his firm belief that the phenomena of diseases and the decomposition of animal fluids were wholly caused by minute living things.[5]

Medicine in America at opening of nineteenth century.

It may be interesting to take a glance at the state of medicine in this country at the opening of the century. [At the opening of the nineteenth century] there were only three schools of medicine, the most important of which were the University of Pennsylvania and the Harvard. There were only two general hospitals. The medical education was chiefly in the hands of the practitioners who took students as apprentices for a certain number of years. The well-to-do students and those wishing a better class of education went to Edinburgh or London. There were only two or three medical journals, and very few books had been published in the country, and the profession was dependent entirely upon translations from the French and upon English works. The only medical libraries were in connexion with the Pennsylvania Hospital and the New York Hospital. The leading practitioners in the early years were Rush and Physick in Philadelphia; Hosack and Mitchill in New York; and James Jackson and John Collins Warren in Boston. There were throughout the country, in smaller places, men of great capabilities and energy, such as Nathan Smith, the founder of the Medical Schools of Dartmouth and of Yale, and Daniel Drake in Cincinnati.[5]

The well-known effect on angina pectoris of mental emotion has never been better expressed than by John Hunter, who used to say that 'his life was in the hands of any rascal who chose to annoy and tease him.' And yet some of the victims of angina have not found mental excitement to be the most serious exciting cause. Thus, in Mr. Sumner's case, 'a sudden turn in his easy chair, while quietly reading at night, would start up the most tearing agony, while at other times an exciting speech in the Senate, accompanied with the most forcible and muscular gesticulations, would not create even the suggestion of a pain.' (Taber Johnson.)[28] **John Hunter (1728–93).**

Harvey and Sydenham, types of the scientific and the practical physician, though contemporaries, were uninfluenced, so far as we know, by each other's work or method. Harvey had little reputation as a practical physician, and Sydenham cared little for theories or experiment. Modern scientific medicine, in which these two great types meet, had its rise in France in the early days of this century. True, there had lived and worked in England the greatest anatomist and medical thinker of modern times; but John Hunter, to whose broad vision disease was but one of the processes of nature to be studied, was as a voice crying in the wilderness to the speculative, theoretical physicians of his day.[30] **Harvey (1578–1658). Sydenham (1624–89).**

The chief facts in Louis's life may be thus briefly stated. He was born in 1787 at Aï. He began the study of law, but abandoned it for that of medicine. **Louis (1787–1872):**

He seems not to have been of a very strong constitution, as he did not pass the inspection for military service. He began the study of medicine at Rheims, and completed his course in Paris, where he graduated in 1813, in the twenty-seventh year of his age. While waiting at home, hesitating what he should do, M. le comte de Saint-Priest, who occupied an official position in Russia, happened to stay for a few hours in the town of Aï to see Louis's family, and it was suggested that the young physician should accompany him to Russia. He consented, and in St. Petersburg obtained a diploma to practise. For three years he seems to have had no settled abode, but wandered about with his friend, who was governor of one of the provinces.

practised in Odessa for four years;

He then settled in Odessa, where he remained for four years and practised with great success. In the last year of his stay in Odessa he was very much disturbed by the high rate of mortality in children with diphtheria, and this appears to have determined him to abandon for a time the practice of medicine and to devote himself to study. With this object in view he returned to Paris, and for six months attended the practice at the Children's Hospital. Among the younger physicians in Paris he found an old fellow pupil, Chomel, physician to La Charité, who offered him opportunities for work in his wards. Louis was at this time thirty-four years of age. Here for six years uninterruptedly he set himself to work to study disease in the wards and in the post-mortem room. At first he appears to have occupied the position simply as a voluntary

but returned to the hospitals for six years for clinical study;

assistant and friend of Chomel, but subsequently he became his *chef de clinique*, and during this period he occupied a room in the *entre-sol* of the hospital. He was a voluminous note-taker and collected in this time an enormous number of important facts.[30]

This remarkable feature in Louis's life has scarcely been dwelt upon sufficiently. I know of no other parallel instance in the history of medicine. It is worth while reading the brief extract from Dr. Cowan's introduction to his translation of the work on Phthisis:—

'He entered the hospital of La Charité as a *clinical clerk*, under his friend, Professor Chomel. For nearly seven years, including the flower of his bodily and mental powers (from the age of thirty-three to forty), he consecrated the whole of his time and talents to *rigorous*, *impartial observation*. All private practice was relinquished, and he allowed no considerations of personal emolument to interfere with the resolution he had formed. For some time his extreme minuteness of inquiry and accuracy of description were the subjects of sneering and ridicule, and *Cui bono?* was not infrequently and tauntingly asked. The absence of any immediate result seemed for a time to justify their contempt of a method involving too much labour and personal sacrifice to be generally popular or easily imitated; and M. Louis himself, at moments, almost yielded to the increasing difficulties of the task he had undertaken. No sooner, however, were his facts sufficiently numerous to admit of numerical analysis than all doubt and hesitation were dissipated, and the conviction that the path he was pursuing could alone conduct him to the discovery of truth became the animating

minuteness of inquiry and accuracy of description;

Cui bono?

his method spoken of with contempt;

but later applauded and imitated;

motive for future perseverance. Many of the results at which he arrived soon attracted general attention, and among those who had formerly derided his method while they admired his zeal, he found many to applaud and a few to imitate. From this moment may be dated the presence of that strong impression of the necessity of exact observation by which the school of Paris has been since so distinguished, and which is now gradually pervading the medical institutions of the continent and our own country; it is undoubtedly to the author of the present volume that we ought to ascribe the practical revival of that system, which had for ages been verbally recognized, but never before rigorously exemplified.'[30]

♁

the Numerical Method,

Louis introduced what is known as the Numerical Method, a plan which we use every day, though the phrase is not now very often on our lips. The guiding motto of his life was *Ars medica tota in observationibus*, in carefully observing facts, carefully collating them, carefully analysing them. To get an accurate knowledge of any disease it is necessary to study a large series of cases and to go into all the particulars—the conditions under which it is met, the subjects specially liable, the various symptoms, the pathological changes, the effect of drugs. This method, so simple, so self-evident, we owe largely to Louis, in whose hands it proved an invaluable instrument of research. He remarks in one place that the edifice of medicine reposes entirely upon facts, and that truth cannot be elicited but from those which have been well and completely observed.[30]

by which is obtained facts upon which the edifice of medicine must rest;

American medicine felt the influence of Louis through two channels, his books and his pupils. Let us speak first of the former. No French writer of the century has had such a large audience in this country; all of his important works were translated and widely read (Louis). The work on Phthisis, the first important outcome of five years' hard work at La Charité in Chomel's wards, was published in 1825. Much had already been done by physicians of the French school on this subject. Bayle's important *Recherches* had been issued in 1810, and Laënnec had revolutionized the study of phthisis by the publication of his treatise on auscultation. I cannot enter into any detailed analysis of the work, but it is one which I can commend to your notice as still of great value, particularly as a model of careful observation. The work was based upon the study of 123 cases observed in Chomel's clinic. The lesions observed at autopsy are first described under the different organs, with great accuracy and detail, and then summarized, following which is an elaborate description of the symptomatology. I do not know of any single work on pulmonary tuberculosis which can be studied with greater profit to-day by the young physician. The fifty years which have elapsed since its publication, and the changes which have taken place in our ideas of tuberculosis, detract naught from the value of his careful anatomical and clinical presentation of the subject.[30]

Louis's channels of influence;

Oliver Wendell Holmes said that he had learned three things in Paris: 'Not to take authority when

his teaching and influence;

I can have facts, not to guess when I can know, and not to think a man must take physic because he is sick.' It seems to me that this group of young fellows brought back from Paris, first, an appreciation of the value of method and accuracy in the study of the phenomena of disease; secondly, a profound, and at the time a much-needed, distrust of drugs; and, thirdly, a Gallic refinement and culture which stamped them, one and all, as unusual men. Let me name the list over as given to me by Stillé* himself:—

his American pupils in Paris between 1830 and 1840.

'From Boston: James Jackson, Jr., H. I. Bowditch, O. W. Holmes, George C. Shattuck, Jr., John C. Warren (then past middle age), John Mason Warren, and John D. Fisher. From Philadelphia: George W. Norris, William W. Gerhard, Casper W. Pennock, Thomas Stewardson, Alfred Stillé, Thomas L. Mütter, E. Campbell Stewart, Charles Bell Gibson, John B. Biddle, David H. Tucker, Meredith Clymer, William P. Johnston, W. S. W. Ruschenburger, Edward Peace, William Pepper, Sr. Baltimore: William Power (see biography of Charles Frick, in Gross's *Lives*). Charleston: G. S. Gibbes, Peter C. Gaillard, Pryce Porcher. Virginia: J. L. Cabell, L. S. Joynes, — Selden, and — Randolph. New York: John A. Swett, Abraham Dubois, Alonzo Clark, Charles L. Mitchell, — Punnet, Charles D. Smith, Valentine Mott, Sr., [and] John T. Metcalfe.'

There were many others, of course, some before Louis's day, as Samuel G. Morton, who was Laënnec's most distinguished American pupil, and some of those mentioned, as Meredith Clymer (*ultimus*

* Died April 20, 1902.

Romanorum) and Metcalfe, just gone (1902), who did not come so directly under Louis's influence, but were pupils of Chomel and Andral.[35]

'And many more whose names on earth are dark'—men of the stamp of Dr. Bassett of Alabama, who felt the strong impulsion to know the best that the world offered, every one of whom has left a deep and enduring impression in his sphere of work.[30]

Thomas Dover (1660–1742):

As Sir Thomas Browne remarks in the *Hydriotaphia*: 'The iniquity of oblivion blindly scattereth her poppy, and deals with the memory of men without distinction to merit of perpetuity.' Thus it happens that Thomas Dover, the doctor, has drifted into our modern life on a powder label (to which way of entering the company of posterity, though sanctified by Mithridates, many would prefer oblivion, even to continuous immortality on a powder so potent and palatable as the *Pulvis Ipecacuanhae compositus*); while Thomas Dover, the buccaneer, third in command, one of the principal owners, and president of the council of the *Duke* and *Duchess*—privateers of the ancient and honourable city of Bristol—discoverer of Alexander Selkirk (the original Robinson Crusoe), in spite of more enduring claims on our gratitude, has been forgotten.[34]

a good fighter and a good hater;

Doubtless the old buccaneer, described as 'a man of rough temper, who could not easily agree with

those about him,' was a striking figure as he passed along the Strand to the Jerusalem Coffee House, where he saw his patients. A good fighter, a good hater, as alas! so many physicians have been, his weaknesses and evil behaviour we may forget, but Captain Thomas Dover, who on the 2nd of February, 1710, found 'Robinson Crusoe,' the world should not forget; and we also of his craft have cause daily to remember with gratitude the student and friend of the great Sydenham, who had the wit, in devising a powder, to remember his master's injunction: *Sine papaveribus, sine opiatis et medicamentis, ex iis confectis, manca et clauda esset medicina.*[34]

discoverer of 'Robinson Crusoe';

Dover's Powder.

♁

Very fitting indeed is it that he who had lived to be 'the last leaf upon the tree' should have fallen peacefully in the autumn which he loved so well. Delightful, too, to think that although he had, to use the expression of Benjamin Franklin, intruded himself these many years into the company of posterity, the freshness and pliancy of his mind had not for a moment failed. Like his own wonderful 'one-hoss shay,' the end was a sudden breakdown; and though he would have confessed, no doubt, to 'a general flavor of decay,' there was nothing local, and his friends had been spared that most distressing of all human spectacles, those cold gradations of decay, in which a man takes nearly as long to die as he does to grow up, and lives a sort of death in life, *ita sine vita vivere, ita sine morte mori.*[38]

Oliver Wendell Holmes (1809-94):

'one-hoss shay';

He has been sandwiched in my affections these many years between Oliver Goldsmith and Charles Lamb. More than once he has been called, I think, the American Goldsmith. Certainly the great distinction of both men lies in that robust humanity which has a smile for the foibles and a tear for the sorrows of their fellow creatures. The English Oliver, with a better schooling for a poet (had he not learned in suffering what he taught in song?), had a finer fancy and at his best a clearer note. With both writers one is at a loss to know which to love the better, the prose or the poetry. Can we name two other prose-writers of equal merit, who have so successfully courted the 'draggle-tailed Muses,' as Goldsmith calls them? Like Charles Lamb, Holmes gains the affections of his readers at the first sitting, and the genial humour, the refined wit, the pathos, the tender sensitiveness to the lights and shadows of life, give to the Breakfast Table Series much of the charm of the *Essays of Elia.*[38]

the American Goldsmith and

the English Goldsmith;

Holmes and Lamb;

A few years later, however, he contributed an article which will long keep his memory green in our ranks.

Child-bed fever was unhappily no new disorder when Oliver Wendell Holmes studied, nor had there been wanting men who had proclaimed forcibly its specific character and its highly contagious nature. Indeed, so far back as 1795, Gordon, of Aberdeen, not only called it a specific contagion, but said he could predict with unerring accuracy

puerperal fever;

the very doctors and nurses in whose practice the cases would develop. Rigby, too, had lent the weight of his authority in favour of the contagiousness, but the question was so far from settled that, as you will hear, many of the leading teachers scouted the idea that doctors and nurses could convey the disorder. Semmelweis had not then begun to make his interesting and conclusive observations, for which his memory has recently been greatly honoured.

his great contribution to science;

In 1842, before the Boston Society for Medical Improvement, Dr. Holmes read a paper entitled 'The Contagiousness of Puerperal Fever,' in which he brought forward a long array of facts in support of the view that the disease was contagious, conveyed usually by the doctor or the nurse, and due to a specific infection. At the time there certainly was not an article in which the subject was presented in so logical and so convincing a manner. As Sydney Smith says, it is not the man who first says a thing, but it is he who says it so long, so loudly, and so clearly that he compels men to hear him—it is to him that the credit belongs; and so far as this country is concerned, the credit of insisting upon the great practical truth of the contagiousness of puerperal fever belongs to Dr. Holmes. The essay is characterized in places by intenseness and great strength of feeling. He says he could not for a moment consent to make a *question* of the momentous fact, which should not be considered a subject for trivial discussion, but which should be acted upon with silent promptitude. 'No nega-

tive facts, no passing opinions, be they what they may, can form any answer to the series of cases now within the reach of all who choose to explore the records of medical science.' Just before the conclusions the following eloquent sentences are found, portions of which are often quoted:—

an historic paragraph;

'It is as a lesson rather than as a reproach, that I call up the memory of these irreparable errors and wrongs. No tongue can tell the heart-breaking calamities they have caused; they have closed the eyes just opened upon a new world of life and happiness; they have bowed the strength of manhood into the dust; they have cast the helplessness of infancy into the stranger's arms, or bequeathed it with less cruelty the death of its dying parent. There is no tone deep enough for record, and no voice loud enough for warning. The woman about to become a mother, or with her new-born infant upon her bosom, should be the object of trembling care and sympathy wherever she bears her tender burden, or stretches her aching limbs. The very outcast of the street has pity upon her sister in degradation when the seal of promised maternity is impressed upon her. The remorseless vengeance of the law brought down upon its victims by a machinery as sure as destiny, is arrested in its fall at a word which reveals her transient claims for mercy. The solemn prayer of the liturgy singles out her sorrows from the multiplied trials of life, to plead for her in the hour of peril. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should regard it negligently, unadvisedly, or selfishly.'

puerperal fever, not

The results of his studies are summed up in a series of eight conclusions, and the strong ground

a misfortune but a crime;

which he took may be gathered from this sentence in the last one: 'The time has come when the existence of a private pestilence in the sphere of a single physician should be looked upon not as a misfortune but a crime.' Fortunately this essay, which was published in the ephemeral *New England Quarterly Journal of Medicine*, was not destined to remain unnoticed. The statements were too bold and the whole tone too resolute not to arouse the antagonism of those whose teachings had been for years diametrically opposed to the contagiousness of puerperal fever.[38]

essay on Puerperal Fever, and the *Chambered Nautilus.*

Some years ago in an editorial note I commented upon a question which Dr. Holmes had asked in his *Hundred Days in Europe.* Somewhere at dinner he had sat next to a successful gynaecologist who had saved some hundreds of lives by his operations, and he asked, 'Which would give the most satisfaction to a thoroughly humane and unselfish being, of cultivated intelligence and lively sensibilities: to have written all the plays which Shakespeare has left as an inheritance for mankind, or to have snatched from the jaws of death more than a hundred fellow creatures, and restored them to sound and comfortable existence?' I remarked that there was nobody who could answer this question so satisfactorily as the Autocrat, and asked from which he derived the greater satisfaction, the *essay on Puerperal Fever*, which had probably saved many more lives than any individual gynaecologist, or the *Chambered Nautilus*, which had given pleasure

to so many thousands. The journal reached Dr. Holmes, and I read you his reply to me, under date of January 21, 1889:—

'I have been rarely more pleased than by your allusion to an old paper of mine. There was a time certainly in which I would have said that the best page of my record was that in which I had fought my battle for the poor poisoned women. I am reminded of that essay from time to time, but it was published in a periodical which died after one year's life, and therefore escaped the wider notice it would have found in the *American Journal of the Medical Sciences*. A lecturer at one of the great London hospitals referred to it the other day, and coupled it with some fine phrases about myself which made me blush, either with modesty or vanity, I forget which.

'I think I will not answer the question you put me. I think oftenest of the *Chambered Nautilus*, which is a favourite poem of mine, though I wrote it myself. The essay only comes up at long intervals. The poem repeats itself in my memory, and is very often spoken of by my correspondents in terms of more than ordinary praise. I had a savage pleasure, I confess, in handling those two professors—learned men both of them, skilful experts, but babies, as it seemed to me, in their capacity of reasoning and arguing. But in writing the poem I was filled with a better feeling—the highest state of mental exaltation and the most crystalline clairvoyance, as it seemed to me, that had ever been granted to me—I mean that lucid vision of one's thought and all forms of expression which will be at once precise and musical, which is the poet's special gift, however large or small in amount or value. There is more selfish pleasure to be had out of the poem—perhaps a nobler satisfaction from the life-saving labour.'[38]

Richard Lea MacDonnell (*ob.* 1891).

Very few men have entered upon the race with greater advantages than did Dr. MacDonnell. To a fine physique and presence, and a charm of manner which is so often continued in this country in the second generation of Irishmen of the Brahmin class—to use an expression of Oliver Wendell Holmes—there were added those mental gifts which alone assure success—industry and perseverance. Very early in his career circumstances in connexion with the accidental death of his father altered his surroundings and threw upon him responsibilities that were faithfully and courageously met, and that gave an unmistakable stamp to a character naturally refined and noble. Success came, cares lightened, and, with domestic, social, and professional relations of the happiest possible kind, the future could not have looked brighter; but—*es hat nicht sollen sein*, and a devoted wife, an aged mother, and a loving sister, with colleagues, students, and friends, mourn his untimely union with

'The inheritors of unfulfilled renown.'[33]

♁

Palmer Howard (1823–89): an ideal student-teacher;

In my early days I came under the influence of an ideal student-teacher, the late Palmer Howard, of Montreal. If you ask what manner of man he was, I would refer you to Matthew Arnold's noble tribute to his father in his well-known poem, *Rugby Chapel*. When young, Dr. Howard had chosen a path—'path to a clear purposed goal'—and he pursued it with unswerving devotion. With him the study and the teaching of medicine were an

absorbing passion, the ardour of which neither the incessant and ever-increasing demands upon his time nor the growing years could quench. When, in the summer of 1871, as a senior student, I first came into intimate contact with him, the problem of tuberculosis was under discussion, stirred up by the epoch-making work of Villemin and the radical views of Niemeyer. Every lung lesion at the Montreal General Hospital had to be shown to him, and I got my first-hand introduction to Laënnec, to Andral, to Graves, and to Stokes, and became familiar with their works. . . . An ideal teacher because a student, ever alert to the new problems, an indomitable energy enabled him, in the midst of an exacting practice, to maintain an ardent enthusiasm, still to keep bright the fires which he had lighted in his youth. Since those days I have seen many teachers, and I have had many colleagues, but I have never known one in whom were more happily combined the stern sense of duty with the mental freshness of youth.[45]

alert to new problems.

♁

To one of my teachers I must pay in passing the tribute of filial affection. There are men here to-day who feel as I do about Dr. James Bovell—that he was of those finer spirits, not uncommon in life, touched to finer issues only in a suitable environment. Would the Paul of evolution have been Thomas Henry Huxley had the Senate elected the young naturalist to a chair in this University (Toronto) in 1851? Only men of a certain metal rise superior to their surroundings, and while Dr.

James Bovell (1817–80).

Bovell had that all-important combination of boundless ambition with energy and industry, he had that fatal fault of diffuseness, in which even genius is strangled. With a quadrilateral mind, which he kept spinning like a teetotum, one side was never kept uppermost for long at a time. Caught in a storm which shook the scientific world with the publication of *The Origin of Species*, instead of sailing before the wind, even were it with bare poles, he put about and sought a harbour of refuge in writing a work on Natural Theology, which you will find on the shelves of second-hand book-shops in a company made respectable at least by the presence of Paley. He was an omnivorous reader and transmuter upon anything in the science of the day, from protoplasm to evolution; but he lacked concentration and that scientific accuracy which only comes with a long training (sometimes, indeed, never comes!), and which is the ballast of the boat. But the bent of his mind was devotional, and early swept into the Tractarian movement, he became an advanced Churchman, a good Anglican Catholic. As he chaffingly remarked one day to his friend, the Rev. Mr. Darling, he was like the waterman in *Pilgrim's Progress*, rowing one way towards Rome, but looking steadfastly in the other direction towards Lambeth. His *Steps to the Altar* and his *Lectures on the Advent* attest the earnestness of his convictions; and later in life, following the example of Linacre, he took orders, and became another illustration of what Cotton Mather calls the angelic conjunction of medicine with divinity.[24]

But what shall I say of Leidy, the man in whom the leaven of science wrought with labour and travail for so many years? The written record survives, scarcely equalled in variety and extent by any naturalist, but how meagre is the picture of the man as known to his friends. The traits which made his life of such value—the patient spirit, the kindly disposition, the sustained zeal—we shall not see again incarnate. The memory of them alone remains. As the echoes of the eulogies upon his life have scarcely died away, I need not recount to this audience his ways and work, but upon one aspect of his character I may dwell for a moment, as illustrating an influence of science which has attracted much attention and aroused discussion. So far as the facts of sense were concerned, there was not a trace of Pyrrhonism in his composition, but in all that relates to the ultra-rational no more consistent disciple of the great sceptic ever lived. There was in him, too, that delightful 'ataraxia,' that imperturbability which is the distinguishing feature of the Pyrrhonist, in the truest sense of the word. A striking parallel exists between Leidy and Darwin in this respect, and it is an interesting fact that the two men of this century who have lived in closest intercourse with nature should have found full satisfaction in their studies and in their domestic affections. In the autobiographical section of the *Life of Charles Darwin*, edited by his son Francis, in which are laid bare with such charming frankness the inner thoughts of the great naturalist, we find that he too had reached in suprasensuous affairs

Joseph Leidy (1823-91):

patient spirit, kindly disposition, sustained zeal;

ataraxia;

Leidy and Darwin;

'stretching the pia mater.'

that state of mental imperturbability in which, to borrow the quaint expression of Sir Thomas Browne, *they stretched not his pia mater*. But while acknowledging that in science scepticism is advisable, Darwin says that he was not himself very sceptical. Of these two men, alike in this point, and with minds distinctly of the Aristotelian type, Darwin yet retained amid an overwhelming accumulation of facts—and here was his great superiority—an extraordinary power of generalizing principles from them. Deficient as was this quality in Leidy, he did not, on the other hand, experience 'the curious and lamentable loss of the higher aesthetic taste' which Darwin mourned, and which may have been due in part to protracted ill-health, and to an absolute necessity of devoting all his powers to collecting facts in support of his great theory.

When I think of Leidy's simple life, of his devotion to the study of Nature, of the closeness of his communion with her for so many years, there recur to my mind time and again the lines:—

'He is made one with Nature; there is heard
His voice in all her music, from the moan
Of thunder, to the song of night's sweet bird;
He is a presence to be felt and known
In darkness and in light, from herb and stone,
Spreading itself where'er that Power may move
Which has withdrawn his being to its own.'[21]

♂

The early American peripatetic teacher.

For many years there was in this country a group of peripatetic teachers, who, like the Sophists of

Greece, went from town to town, staying a year or two in each, or they divided their time between a winter session in a large city school and a summer term in a small country one. Among them Daniel Drake takes the precedence, as he made eleven moves in the course of his stirring and eventful life. Bartlett comes an easy second, having taught in nine schools. Dunglison, T. R. Beck, Willard Parker, Alonzo Clark, the elder Gross, Austin Flint, Frank H. Hamilton, and many others whom I could name, belonged to this group of wandering professors. The medical education of the day was almost exclusively theoretical; the teachers lectured for a short four months' session, there was a little dissection, a few major operations were witnessed, the fees were paid, examinations were held, and all was over. No wonder, under such conditions, that many of the most flourishing schools were found amid sylvan groves in small country towns. In New England there were five such schools, and in the State of New York the well-known schools of Fairfield and Geneva. As there was not enough practice in the small places to go round, the teachers for the most part stayed only for the session, at the end of which it was not unusual for the major part of the faculty, with the students, to migrate to another institution, where the lectures were repeated and the class graduated.[42]

The new student.

Compare the picture of the 'sawbones' of 1842, as given in the recent biography of Sir Henry Acland, with the representatives to-day, and it is evident

a great revolution has been effected, and very largely by the salutary influences of improved methods of education. It is possible now to fill out a day with practical work, varied enough to prevent monotony, and so arranged that the knowledge is picked out by the student himself, and not thrust into him willy-nilly, at the point of the tongue. He exercises his wits, and is no longer a passive Strasbourg goose, tied up and stuffed to repletion.[24]

OUR DUTY TO BETTER OUR TIMES

In the dedication of his *Holy War* Thomas Fuller has some very happy and characteristic remarks on the bounden duty of a man to better his heritage of birth or fortune, and what the father found glass and made crystal, he urges the son to find crystal and make pearl.[16]

Volte-face often necessary.

Even in well-known affections, advances are made from time to time that render necessary a revision of our accumulated knowledge, a readjustment of old positions, a removal even of old landmarks. Perhaps the most remarkable illustration of this is offered by the discovery of a tubercle bacillus. What a *volte-face* for those of us who were teachers before 1881! Happy those who had ability and wit sufficient for the summersault! Scarcely less important has been the revolution in our knowledge of malaria since the researches of Laveran, in 1881, on the parasite of the disease.[17]

♂

The pioneer spirit.

By temperament or conviction there are a few men in every community who cannot bow to the Baals of the society about them, and who stand aloof, in thought at least, from the common herd. Such men in small circles tread a steep and thorny road, and of such in all ages has the race delighted to make its martyrs. The letters indicate in Dr. Bassett a restless, non-conforming spirit, which turned aside from the hollowness and deceit of the life about him. As a student he had doubtless felt a glow of enthusiasm at the rapid development of the science of medicine, and amid the worries and vexations of a country practice his heart burned with the hope of some time visiting the centres of learning. As the years passed, the impulse grew more and more urgent to go forth and see the great minds which had controlled his hours of study. All students flocked to Paris in the fourth decade. Nowhere else was the pool so deeply stirred,

and Laënnec, Broussais, Louis, Andral, Velpeau, and others dominated the thoughts of the profession.[12]

♁

William Beaumont (1785–1853).

You do well, citizens of St. Louis and members of our profession, to cherish the memory of William Beaumont. Alive you honoured and rewarded him, and there is no reproach against you of merits neglected and talents unrecognized. The profession of the northern part of the State of Michigan has honoured itself in erecting a monument to his memory, near the scene of his disinterested labours in the cause of humanity and science. His name is linked with one of your educational institutions, and joined with that of a distinguished labourer in another field of practice. But he has a far higher honour than any you can give him here—the honour that can only come when the man and the opportunity meet, and match. Beaumont is the pioneer physiologist of this country, the first to make an important and enduring contribution to this science. His work remains a model of patient, persevering investigation, experiment and research, and the highest praise we can give him is to say that he lived up to and fulfilled the ideals with which he set out and which he expressed when he said: 'Truth, like beauty, when "unadorned, is adorned the most," and, in prosecuting these experiments and inquiries, I believe I have been guided by its light.'[7]

♁

The nineteenth century.

The century now drawing to a close has seen the realization of much that the wise of old longed for,

much of which the earnest spirits of the past had dreamt. It has been a century of real progress—a time of the loosening of bands and bonds; and medicine too, after an enslavement, ecclesiastical and philosophical, received its emancipation. Forsaking the traditions of the elders, and scouting the Shibboleth of schools and sects, she has at last put off the garments of her pride, and with the reed of humility in her hand sits at the feet of her mistress, the new science. Not to any one man can this revolution be ascribed: the *Zeitgeist* was potent, and like a leaven worked even in unwilling minds; but no physician of our time has done more to promote the change, or by his individual efforts to win his generation to accept it, than Rudolf Virchow.[8]

Virchow (1821–1902): the sanitarian.

Virchow's life-work has been the study of the processes of disease, and in the profession we revere him as the greatest master that has appeared since John Hunter. There is another aspect of his work which has been memorable for good to his native city. From the day when, as a young man of twenty-seven, he was sent by the Prussian Government to Upper Silesia to study the typhus epidemic, then raging among the half-starved population, he has been one of the most powerful advocates in Germany for sanitary reform; and it is not too much to say that it is largely to his efforts that the city of Berlin owes its magnificent system of drainage. His work in this department has been simply monumental, and characterized by the thoroughness which marks the specialist.[8]

Bichat's *Anatomie générale* laid the foundation of the positive or modern method of the study of medicine, in which theory and reasoning were replaced by observation and analysis. Laënnec, with the stethoscope, and with an accurate study of disease at the bedside and in the post-mortem room, almost created clinical medicine as we know it to-day.[30]

Bichat (1771–1802).

THE HUMANITIES IN MEDICINE

QUALITIES OF HEART AND HEAD

A physician may possess the science of Harvey and the art of Sydenham, and yet there may be lacking in him those finer qualities of heart and head which count for so much in life.[4]

Breeding and pasture.

Pasture is not everything, and that indefinable, though well understood, something which we know as breeding is not always an accompaniment of great professional skill. Medicine is seen at its best in men whose faculties have had the highest and most harmonious training.[4]

♁

The Lathams, the Watsons, the Pagets, the Jenners, and the Gardiners have influenced the profession less by their special work than by exemplifying those graces of life and refinements of heart which make up a character.[4]

♁

But by the neglect of the studies of the humanities, which has been far too general, the profession loses a very precious quality.[4]

♁

And the men of this stamp in Greater Britain have left the most enduring mark—Beaumont, Bovell, and Hodder in Toronto; Holmes, Campbell, and Howard in Montreal; the Warrens, the Jacksons, the Bigelows, the Bowditches, and the Shattucks in Boston; Bard, Hossack, Francis, Clark, and Flint of New York; Morgan, Shippen, Redman, Rush, Coxe, the elder Wood, the elder Pepper, and the elder Mitchell of Philadelphia—Brahmins all, in the language of the greatest Brahmin among them, Oliver Wendell Holmes: these and men like unto them have been the leaven which has raised our profession above the dead level of a business.[4]

♁

Biology and the humanities.

Biology touches the problem of life at every point, and may claim, as no other science, completeness

of view and a comprehensiveness which pertains to it alone. To all whose daily work lies in her manifestations the value of a deep insight into her relations cannot be overestimated. The study of biology trains the mind in accurate methods of observation and correct methods of reasoning, and gives to a man clearer points of view, and an attitude of mind more serviceable in the working-day world than that given by other sciences, or even by the humanities.[21]

Incorruptible treasures of the heart.

After ten years of hard work I left this city (Montreal) a rich man, not in this world's goods, for such I have the misfortune—or the good fortune—lightly to esteem, but rich in the goods which neither rust nor moth has been able to corrupt—in treasures of friendship and good fellowship, and in those treasures of widened experience and a fuller knowledge of men and manners which contact with the bright minds in the profession ensures.[13]

Culture.

But there is a still greater sacrifice which many of us make, heedlessly and thoughtlessly forgetting that 'Man does not live by bread alone.' One cannot practise medicine alone and practise it early and late, as so many of us have to do, and hope to escape the malign influences of a routine life. The incessant concentration of thought upon one subject, however interesting, tethers a man's mind in a narrow field. The practitioner needs culture as well as learning. The earliest picture we have in

literature of a scientific physician, in our sense of the term, is of a cultured Greek gentleman; and I care not whether the young man labours among the beautiful homes on Sherbrooke Street, or in slums of Caughnawauga, or in some sparsely settled country district, he cannot afford to have learning only. In no profession does culture count for so much as in medicine, and no man needs it more than the general practitioner, working among all sorts and conditions of men, many of whom are influenced quite as much by his general ability, which they can appreciate, as by his learning of which they have no measure. The day has passed for the 'practiser of physic' to be like Mr. Robert Levet, Dr. Johnson's friend, 'obscurely wise and coarsely kind.' The wider and freer a man's general education the better practitioner is he likely to be, particularly among the higher classes, to whom the reassurance and sympathy of a cultivated gentleman of the type of Eryximachus may mean much more than pills and potions. But what of the men of the type of Mr. Robert Levet, or 'Ole Docteur Fiset,' whose virtues walk a narrow round, the men who do the hard general practices in the poorer districts of the large cities, in the factory towns and in the widely scattered agricultural regions—what, I hear you say, has culture to do with them? Everything! It is the *bichloride* which may prevent the infection and keep a man sweet and whole amid the most debasing surroundings. Of very little direct value to him in his practice—though the poor have a pretty keen

appreciation of a gentleman—it may serve to prevent the degeneration so apt to overtake the over-worked practitioner, whose nature is only too prone to be subdued like the dyer's hand to what it works in. If a man does not sell his soul; if he does not part with his birthright of independence for a mess of pottage to the Ishmaelites who harass our borders with their clubs, and oppress us with their exactions; if he can only keep free, the conditions of practice are nowhere incompatible with St. Paul's noble Christian or Aristotle's true gentleman.[23] (Sir Thomas Browne.)

Professional work of any sort tends to narrow the mind, to limit the point of view, and to put a hall-mark on a man of a most unmistakable kind. On the one hand are the intense, ardent natures, absorbed in their studies and quickly losing interest in everything but their profession, while other faculties and interests 'fust' unused. On the other hand are the bovine brethren, who think of nothing but the treadmill and the corn.. From very different causes, the one from concentration, the other from apathy, both are apt to neglect those outside studies that widen the sympathies and help a man to get the best there is out of life. Like art, medicine is an exacting mistress, and in the pursuit of one of the scientific branches, sometimes too in practice, not a portion of a man's spirit may be left free for other distractions, but this does not often happen. On account of the intimate personal nature of his work, the medical man, perhaps more

The leaven of life.

than any other man, needs that higher education of which Plato speaks,—'that education in virtue from youth upwards, which enables a man to pursue the ideal perfection.' It is not for all, nor can all attain it, but there is comfort and help in the pursuit, even though the end is never reached. For a large majority the daily round and the common task furnish more than enough to satisfy their heart's desire, and there seems no room left for anything else. Like the good easy man whom Milton scores in the *Areopagitica*, whose religion was a 'traffic so entangled that of all mysteries he could not skill to keep a stock going upon that trade,' and handed it over with all the locks and keys to 'a divine of note and estimation,' so it is with many of us in the matter of this higher education. No longer intrinsic, wrought in us and engrained, it has become, in Milton's phrase, a 'dividual movable,' handed over nowadays to the daily press or to the haphazard instruction of the pulpit, the platform, or the magazines. Like a good many other things, it comes in a better and more enduring form if not too consciously sought. The all-important thing is to get a good relish for the good company of the race in a daily intercourse with some of the great minds. Now, in the spring-time of life, pick your intimates among them, and begin a systematic cultivation of their works. Many of you will need a strong leaven to raise you above the dough in which it will be your lot to labour. Uncongenial surroundings, an ever-present dissonance between the aspirations within and the

actualities without, the oppressive discords of human society, the bitter tragedies of life, the *lacrymae rerum*, beside the hidden springs of which we sit in sad despair—all these tend to foster in some natures a cynicism quite foreign to our vocation, and to which this inner education offers the best antidote. Personal contact with men of high purpose and character will help a man to make a start—to have the desire, at least; but in its fullness this culture—for that word best expresses it—has to be wrought out by each one for himself. Start at once a bedside library and spend the last half-hour of the day in communion with the saints of humanity. There are great lessons to be learned from Job and from David, from Isaiah and St. Paul. Taught by Shakespeare you may take your intellectual and moral measure with singular precision. Learn to love Epictetus and Marcus Aurelius. Should you be so fortunate as to be born a Platonist, Jowett will introduce you to the great master through whom alone we can think in certain levels, and whose perpetual modernness startles and delights. Montaigne will teach you moderation in all things, and to be 'sealed of his tribe' is a special privilege. We have in the profession only a few great literary heroes of the first rank, the friendship and counsel of two of whom you cannot too earnestly seek. Sir Thomas Browne's *Religio Medici* should be your pocket companion, while from the Breakfast Table Series of Oliver Wendell Holmes you can glean a philosophy of life peculiarly suited to the needs of a physician.

There are at least a dozen or more works which would be helpful in getting wisdom in life which comes only to those who earnestly seek it.[24]

♁

The physician: qualities of.

The physician needs a clear head and a kind heart; his work is arduous and complex, requiring the exercise of the very highest faculties of the mind, while constantly appealing to the emotions and finer feelings.[25]

THE PRACTICAL IN MEDICINE

THE PRACTICAL ANGLO-SAXON

Thucydides it was who said of the Greeks that they possessed 'the power of thinking before they acted, and of acting, too.' The same is true in a high degree of the English race. To know just what has to be done, then to do it, comprises the whole philosophy of practical life.[4]

The practical Anglo-Saxon.

Bichat, Laënnec, and Louis laid the foundation of modern clinical medicine; Virchow and his pupils of scientific pathology; while Pasteur and Koch have revolutionized the study of the causes of disease; and yet, the modern history of the art of medicine could almost be written in its fullness from the records of the Anglo-Saxon race. We can claim every practical advance of the very first rank —vaccination, anaesthesia, preventive medicine, and antiseptic surgery, the 'captain jewels in the carcanet' of the profession, beside which can be placed no others of equal lustre.[4]

♁

Wisdom.

And finally every medical student should remember that his end is not to be made a chemist or physiologist or anatomist, but to learn how to recognize and treat disease, how to become a practical physician. Twenty years ago, during the summer session, I held my first class in clinical medicine at the Montreal General Hospital, and on the title-page of a notebook I had printed for the students I placed the following sentence, which you will find the alpha and omega of practical medicine, not that it by any means covers the whole field of his education:—

'The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it, converts itself into practical power. The rest hangs like dust about the brain or dries like rain-drops off the stones.' (Froude.)[13]

♁

The high mission of the physician.

'Tis no idle challenge which we physicians throw out to the world when we claim that our mission is

of the highest and of the noblest kind, not alone in curing disease but in educating the people in the laws of health, and in preventing the spread of plagues and pestilences, nor can it be gainsaid that of late years our record as a body has been more encouraging in its practical results than those of the other learned professions.[25]

♁

Pain.

But take the other view of it—think of the Nemesis which has overtaken pain during the past fifty years! Anaesthetics and antiseptic surgery have almost manacled the demon, and since their introduction the aggregate of pain which has been prevented far outweighs in civilized communities that which has been suffered. Even the curse of travail has been lifted from the soul of women.[25]

♁

The new school.

The processes of disease are so complex that it is excessively difficult to search out the laws which control them, and, although we have seen a complete revolution in our ideas, what has been accomplished by the new school of medicine is only an earnest of what the future has in store.[25]

♁

Cui bono?

The student must be allowed full freedom in his work, undisturbed by the utilitarian spirit of the Philistine, who cries, *Cui bono?* and distrusts pure science. The present remarkable position in applied science and in industrial trades of all sorts has been made possible by men who did pioneer work in chemistry, in physics, in biology, and in physiology,

without a thought in their researches of any practical application. The members of this higher group of productive students are rarely understood by the common spirits, who appreciate as little their unselfish devotion as their unworldly neglect of the practical side of the problems. [45]

CATHOLICITY IN MEDICINE

THE CURSED SPIRIT OF INTOLERANCE

Breathes here a man with soul so dead that it does not glow at the thought of what the men of his blood have done and suffered to make his country what it is? There is room, plenty of room, for proper pride of land and birth. What I inveigh against is a cursed spirit of intolerance, conceived in distrust and bred in ignorance, that makes the mental attitude perennially antagonistic, even bitterly antagonistic, to everything foreign, that subordinates everywhere the race to the nation, forgetting the higher claims of human brotherhood.[3]

Chauvinism. At any rate, whether he goes abroad or not, let him early escape from the besetting sin of the young physician, chauvinism, that intolerant attitude of mind which brooks no regard for anything outside his own circle and his own school. [6]

♂

Need of the *Wanderjahre*. Post-graduate study is needed in all classes among us. The school for the young practitioner is a general practice in which the number and variety of cases will enable him at once to put his methods into daily use. A serious defect may warp his course from the outset. Our students study too much under one set of teachers. In English and American schools they do not move about enough. At a tender age, four or five years give a man a local attachment to place and teachers which is very natural, very nice, but not always the best thing for him. He goes out with a strong bias already in his mind, and is ready to cry, 'I am of Guy's,' 'I am of Bart.'s,' or 'I am an Edinburgh man.' To escape from these local trammels, which may badly handicap a man by giving him an arrogant sense of superiority often most manifest when there is least warrant, is very difficult. I knew three brothers, Edinburgh men, good fellows at heart and good practitioners, but for them the science and art of medicine never extended beyond what their old teachers had taught. A Guy's man they could just endure, for the sake, as one of them said, of Bright, and Cooper, and Addison, but for men of other schools they entertained a supreme and really ludicrous contempt. [7]

Can we say, as English, French, German, or American physicians, that our culture is always cosmopolitan, not national, that our attitude of mind is always as frankly open and friendly to the French as to the English, to the American as to the German, and that we are free at all times and in all places from prejudice, at all times free from a self-satisfied feeling of superiority, the one over the other? There has been of late years a closer union of the profession of the different countries through the International Congress and through the international meetings of the special societies; but this is not enough, and the hostile attitude has by no means disappeared. Ignorance is at the root. When a man talks slightingly of the position and work of his profession in any country, or when a teacher tells you that he fails to find inspiration in the work of his foreign colleagues, in the words of the Arabian proverb—he is a fool, shun him. Full knowledge which alone disperses the mists of ignorance, can only be obtained by travel or by a thorough acquaintance with the literature of the different countries. Personal, first-hand intercourse with men of different lands, when the mind is young and plastic, is the best vaccination against disease. The man who has sat at the feet of Virchow, or has listened to Traube, or Helmholtz, or Cohnheim, can never look with unfriendly eyes at German medicine or German methods. Who ever met with an English or American pupil of Louis or of Charcot, who did not love French medicine, if not for its own sake, at least for the reverence he bore

The curse of nationalism.

his great master? Let our young men, particularly those who aspire to teaching positions, go abroad. They can find at home laboratories and hospitals as well equipped as any in the world, but they may find abroad more than they knew they sought—widened sympathies, heightened ideals, and something perhaps of a *Weltcultur* which will remain through life as the best protection against the vice of nationalism.[23]

♁

If the life and work of such men as Bichat and Laënnec will not stir the blood of a young man and make him feel proud of France and of Frenchmen, he must be a dull and muddly-mettled rascal. In reading the life of Hunter, of Jenner, who thinks of the nationality which is merged and lost in our interest in the man and in his work? In the halcyon days of the Renaissance there was no nationalism in medicine, but a fine catholic spirit made great leaders like Vesalius, Eustachius, Stensen, and others at home in every country in Europe. While this is impossible to-day, a great teacher of any country may have a world-wide audience in our journal literature, which has done so much to make medicine cosmopolitan.[23]

♁

Democracy in medicine.

Shun as most pernicious that frame of mind, too often, I fear, seen in physicians, which assumes an air of superiority and limits as worthy of your communion only those with satisfactory collegiate or sartorial credentials.[26]

The passports to your fellowship should be honesty of purpose and a devotion to the highest interest of your profession, and these you will find widely diffused, sometimes apparent only when you get beneath the crust of a rough exterior.[24]

♁

The cosmopolitan character of the physician.

By his commission the physician is sent to the sick, and knowing in his calling neither Jew nor Gentile, bond or free, perhaps he alone rises superior to those differences which separate and make us dwell apart, too often oblivious to the common hopes and frailties which should bind us together as a race. In his professional relations, though divided by national lines, there remains the feeling that he belongs to a guild which owes no local allegiance, which has neither king nor country, but whose work is in the world. The Aesculapian temple has given place to the hospital, and the priestly character of the physician has vanished with the ages; still, there is left with us a strong feeling of brotherhood, a sense of unity, which the limitations of language, race, and country have not been able to efface. So it has seemed meet and right to gather here this evening to do honour to a man—not of this country, nor of our blood—whose life has been spent in the highest interests of humanity, whose special work has revolutionized the science of medicine, whose genius has shed lustre upon our craft.[8]

♁

The 'lock and key' laboratory.

Another unpleasant manifestation of collegiate chauvinism is the outcome, perhaps, of the very keen com-

petition which at present exists in scientific circles. Instead of a generous appreciation of the work done in other places, there is a settled hostility and a narrowness of judgement but little in keeping with the true spirit of science. Worse still is the 'lock and key' laboratory in which suspicion and distrust reign, and every one is jealous and fearful lest the other should know of or find out about his work. Thank God! this base and bastard spirit is not much seen; but it is about, and I would earnestly advise any young man who unwittingly finds himself in a laboratory pervaded with this atmosphere, to get out ere the contagion sinks into his soul.[23]

Science and practice.

It is well to acknowledge the debt which we every-day practitioners owe to the great leaders and workers in the scientific branches of our art. We dwell too much in corners, and, consumed with the petty cares of a bread-and-butter struggle, forget that outside our routine lie Elysian fields into which we may never have wandered, the tillage of which is not done by our hands, but the fruits of which we of the profession (and you of the public) fully and freely enjoy. The lesson which should sink deepest into our hearts is the answer which a life such as Virchow's gives to those who to-day, as in past generations, see only pills and potions in the profession of medicine, and who, utilizing the gains of science, fail to appreciate the dignity and the worth of the methods by which they are attained. As Pausanias pestered Empedocles, even

to the end, for the details of the cure of Pantheia, so there are with us still those who, 'asking not wisdom, but drugs to charm with,' are impatient at the slow progress of science, forgetting that the chaos from which order is now appearing has been in great part dispelled by the work of one still living—by the man whom to-night we delight to honour.[8]

HONESTY, TRUTH, ACCURACY, AND THOROUGHNESS IN MEDICINE

THE ARTISTIC SENSE OF PERFECTION

The artistic sense of perfection in work is another much-to-be-desired quality to be cultivated. No matter how trifling the matter on hand, do it with a feeling that it demands the best that is in you, and when done look it over with a critical eye, not sparing a strict judgement of yourself. This it is that makes anatomy a student's touchstone. Take the man who does his 'part' to perfection, who has got out all there is in it, who labours over the tags of connective tissue, and who demonstrated Meckel's ganglion in his part—this is the fellow in after years who is apt in emergencies, who saves a leg badly smashed in a railway accident, or fights out to the finish, never knowing when he is beaten, in a case of typhoid fever.[24]

Nature and disease.

If we have now so far outgrown this idea as to hesitate to suggest, in seasons of epidemic peril, that 'it is for our sins we suffer'—when we know the drainage is bad; if we no longer mock the heart prostrate in the grief of loss with the words 'whom the Lord loveth He chasteneth'—when we know the milk should have been sterilized—if, I say, we have, in a measure, become emancipated from such teachings, we have not yet risen to a true conception of nature.[14]

♁

***Credo* of a physician.**

Rarely has the *credo* of a zealous physician been more beautifully expressed than in the following words of Dr. Bassett:—

'I do not say that the study of nature, human and comparative, as far as it relates to medicine, is an easy task; let any one undertake a foreign language, and when he thinks he has mastered it, let him go into its native country and attempt to use it among the polite and well informed; if he succeed, let him go among the illiterate and rude, where slang is current; into the lunatic asylum, where the vernacular is babbled in broken sentences through the mouth of an idiot, and attempt to understand this; should he again succeed he may safely say that he knows the language. Let him then set down and calculate the cost, in labour, time, and talent; then square this amount and go boldly into the study of physiology; and when he has exhausted his programme, he will find himself humbly knocking at the door of the temple, and it will be opened; for diligence, like the vinegar of Hannibal, will make a way through frozen Alps; it is the "Open Sesame" of our profession. When he is satisfied with the beautiful portions of the

interior, its vast and varied dimensions, the intricate and astounding action of its machinery, obeying laws of a singular stability, whose very conflict produces harmony under the government of secondary laws, if there be anything secondary in nature!—when he is satisfied (and such are not satisfied until informed), he will be led to his ultimate object, to take his last lessons from the poor and suffering, the fevered and phrenzied, from the Jobs and Lazaruses,—into the pest-houses and prisons, and here, in the magazines of misery and contagion, these Babels of disease and sin, he must not only take up his abode, but following the example of his Divine Master, he must love to dwell there;—this is Pathology. When such an one re-enters the world he is a physician; his vast labours have not only taught him how little he knows, but that he knows his little well. Conscious of this virtue, he feels no necessity of trumpeting his professional acquirements abroad, but with becoming modesty and true dignity, which constitutes genuine professional pride, he leaves this to the good sense of his fellow citizens to discover.'[12]

♁

Fragments of truth.

You remember, in the Egyptian story, how Typhon with his conspirators dealt with good Osiris; how they took the virgin Truth, hewed her lovely body into a thousand pieces, and scattered them to the four winds; and, as Milton says, 'from that time ever since, the sad friends of truth, such as durst appear, imitating the careful search that Isis made for the mangled body of Osiris, went up and down gathering up limb by limb still as they could find them. We have not yet found them all,' but each

of us may pick up a fragment, perhaps two, and in moments when mortality weighs less heavily upon the spirit, we can, as in a vision, see the form divine, just as a great naturalist, an Owen or a Leidy, can reconstruct an ideal creature from a fossil fragment. [20]

♁

The discipline of science.

To the physician particularly a scientific discipline is an incalculable gift, which leavens his whole life, giving exactness to habits of thought and tempering the mind with that judicious faculty of distrust which can alone, amid the uncertainties of practice, make him wise unto salvation. For perdition inevitable awaits the mind of the practitioner who has never had the full inoculation with the leaven, who has never grasped clearly the relations of science to his art, and who knows nothing and perhaps cares less for the limitations of either. [21]

♁

Humbug.

It cannot be denied that in dealings with the public just a little touch of humbug is immensely effective, but it is not necessary.

In a large city there were three eminent consultants of world-wide reputation ; one was said to be a good physician but no humbug, the second was no physician but a great humbug, the third was a great physician and a great humbug. The first achieved the greatest success, professional and social, possibly not financial. [6]

♁

Truth hard to reach.

Start out with the conviction that absolute truth is hard to reach in matters relating to our fellow

creatures, healthy or diseased, that slips in observation are inevitable even with the best trained faculties, that errors in judgement must occur in the practice of an art which consists largely in balancing probabilities;—start, I say, with this attitude of mind, and mistakes will be acknowledged and regretted; but instead of a slow process of self-deception, with ever-increasing inability to recognize truth, you will draw from your errors the very lessons which may enable you to avoid their repetition.[22]

♁

Humility.

And, for the sake of what it brings, the grace of humility is a precious gift. When to the sessions of sweet silent thought you summon up the remembrance of your own imperfections, the faults of your brothers will seem less grievous, and, in the quaint language of Sir Thomas Browne, you will 'allow one eye for what is laudable in them.'[22]

♁

The wrangling and unseemly disputes which have too often disgraced our profession arise, in a great majority of cases, on the one hand, from this morbid sensitiveness to the confession of error, and, on the other, from a lack of brotherly consideration, and a convenient forgetfulness of our own failings.[22]

♁

The sciences essential.

A man cannot become a competent surgeon without a full knowledge of human anatomy and physiology, and the physician without physiology and chemistry flounders along in an aimless fashion, never able to gain any accurate conception of

disease, practising a sort of popgun pharmacy, hitting now the malady and again the patient, he himself not knowing which.[25]

♁

Humility.

The art of detachment, the virtue of method, and the quality of thoroughness may make you students, in the true sense of the word, successful practitioners, or even great investigators, but your characters may still lack that which can alone give permanence to powers—the grace of humility.[22]

♁

As the divine Italian, at the very entrance to Purgatory, was led by his gentle master to the banks of the island and girt with a rush, indicating thereby that he had cast off all pride and self-conceit, and was prepared for his perilous ascent to the realms above, so should you, now at the outset of your journey, take the reed of humility in your hands, in token that you appreciate the length of the way, the difficulties to be overcome, and the fallibility of the faculties upon which you depend.[22]

♁

In these days of aggressive self-assertion, when the stress of competition is so keen and the desire to make the most of oneself so universal, it may seem a little old-fashioned to preach the necessity of this virtue, but I insist for its own sake, and for the sake of what it brings, that a due humility should take the place of honour on the list.[22]

♁

Reverence for truth the fruit of humility.

For its own sake, since with it (humility) comes not only a reverence for truth, but also a proper

estimation of the difficulties encountered in our search for it.[22]

♁

Truth.

At the outset do not be worried about this big subject—Truth. It is a very simple matter if each one of you starts with the desire to get as much as possible. No human being is constituted to know the truth, the whole truth, and nothing but the truth; and even the best of men must be content with fragments, with partial glimpses, never the full fruition. In this unsatisfied quest the attitude of mind, the desire, the thirst (a thirst that from the soul must rise!), the fervent longing are the be-all and the end-all.[45]

♁

Truth: what it is.

What is the student but a lover courting a fickle mistress who ever eludes his grasp? In this very elusiveness is brought out his second great characteristic—steadfastness of purpose. Unless from the start the limitations incident to our frail human faculties are frankly accepted, nothing but disappointment awaits you. The truth is the best you can get with your best endeavour, the best that the best men accept—with this you may soon learn to be satisfied, at the same time retaining a due humility and an earnest desire for an ever larger portion.[45]

♁

Not recognizing the truth—'mind-blindness.'

Only by keeping the mind plastic and receptive does the student escape perdition. It is not, as Charles Lamb remarks, that some people do not know what to do with truth when it is offered to

them, but the tragic fate is to reach, after years of patient search, a condition of mind-blindness, in which the truth is not recognized, though it stares you in the face. This can never happen to a man who has followed step by step the growth of a truth, and who knows the painful phases of its evolution. It is one of the great tragedies of life that every truth has to struggle to acceptance against honest but mind-blind students. Harvey knew his contemporaries well, and for twelve successive years demonstrated the circulation of the blood before daring to publish the facts on which the truth was based. Only steadfastness of purpose and humility enable the student to shift his position to meet the new conditions in which new truths are born.[45]

Professional sensitiveness.

More perhaps than any other professional man, the doctor has a curious—shall I say morbid?—sensitiveness to (what he regards) personal error. In a way this is right; but it is too often accompanied by a cocksureness of opinion which, if encouraged, leads him to so lively a conceit that the mere suggestion of mistake under any circumstances is regarded as a reflection on his honour, a reflection equally resented whether of lay or professional origin.[22]

Thoroughness.

And thirdly, add to the virtue of method the *quality of thoroughness*, an element of such importance that I had thought of making it the only subject of my remarks.[22]

Let me tell you briefly what it means. A knowledge of the fundamental sciences upon which our art is based—chemistry, anatomy, and physiology—not a smattering, but a full and deep acquaintance, not with all the facts—that is impossible—but with the great principles based upon them. [22]

You cannot of course in the brief years of pupilage so grasp the details of the various branches that you can surely recognize and successfully treat all cases. But here, if you mastered certain principles, is at any rate one benefit of thoroughness—you will avoid the sloughs of charlatanism. [22]

You should, as students, become familiar with the methods by which advances in knowledge are made, and in the laboratory see clearly the paths the great masters have trodden, though you yourselves cannot walk therein. [22]

Charlatanism.

The higher the standard of education in a profession the less marked will be the charlatanism, whereas no greater incentive to its development can be found than in sending out from our colleges men who have not had mental training sufficient to enable them to judge between the excellent and the inferior, the sound and the unsound, the true and the half true. [22]

The art of detachment.

A rare and precious gift is the art of detachment, by which a man may so separate himself from a life-

long environment, as to take a panoramic view of the conditions under which he has lived and moved; it frees him from Plato's den long enough to see the realities as they are, the shadows as they appear. Could a physician attain to such an art, he would find in the state of his profession a theme calling as well for the exercise of the highest faculties of description and imagination as for the deepest philosophic insight.[23]

Intellectual detachment.

I began by speaking of the art of detachment as that rare and precious quality demanded of one who wished to take a philosophical view of the profession as a whole. In another way and in another sense this art may be still more precious. There is possible to each one of us a higher type of intellectual detachment, a sort of separation from the vegetative life of the workaday world—always too much with us—which may enable a man to gain a true knowledge of himself and of his relations to his fellows. Once attained, self-deception is impossible, and he may see himself even as he is seen—not always as he would like to be seen—and his own deeds and the deeds of others stand out in their true light. In such an atmosphere pity for himself is so commingled with sympathy and love for others that there is no place left for criticism or for a harsh judgement of his brother. But, as Sir Thomas Browne—most liberal of men and most distinguished of general practitioners—so beautifully remarks: 'These are thoughts of things which thoughts but tenderly touch,' and it may be

sufficient to remind this audience, made up of practical men, that the word of action is stronger than the word of speech.[23]

In the first place, acquire early the *art of detachment*, by which I mean the faculty of isolating yourselves from the pursuits and pleasures incident to youth.[22] (See *Work*.)

The art of detachment.

Occasionally we do find an individual who takes to toil as others to pleasure, but the majority of us have to wrestle hard with the original Adam, and find it no easy matter to 'scorn delights and live laborious days.'[22] (See *Work*.)

Of special importance is this gift (of isolating yourselves from the pursuits and pleasures incident to youth) to those of you who reside for the first time in a large city, the many attractions of which offer a serious obstacle to its acquisition. The discipline necessary to secure this art brings in its train habits of self-control, and forms a valuable introduction to the stern realities of life.[22] (See *Work*.)

I need scarcely warn you against too close attention to your studies. I have yet to meet a medical student, the heyday in whose blood had been quite tamed in his college days; but if you think I have placed too much stress upon isolation in putting the *art of detachment* first in order amongst the *desiderata*, let me temper the hard saying by

telling you how with 'labours assiduous due pleasures to mix.'[22] (See *Work*.)

♁

Pills and potions.

It cannot be denied that we have learned more rapidly how to prevent than how to cure diseases, but with a definite outline of our ignorance we no longer live now in a fool's paradise, and fondly imagine that in all cases we control the issues of life and death with our pills and potions.[25]

♁

It took the profession many generations to learn that fevers ran their course, influenced very little, if at all, by drugs, and the £60 which old Dover complained was spent in drugs in a case of ordinary fever about the middle of the eighteenth century is now better expended on a trained nurse, with infinitely less risk, and with infinitely greater comfort to the patient.[25]

♁

With the diminished reliance upon drugs, there has been a return with profit to the older measures of diet, exercise, baths, and frictions, the remedies with which the Bithynian Asclepiades doctored the Romans so successfully in the first century.[25]

♁

Though used less frequently, medicines are now given with infinitely greater skill; we know better their indications and contra-indications; and we may safely say (reversing the proportion of fifty years ago) that for one damaged by dosing, one hundred are saved.[25]

ENCOURAGEMENT AND INFLUENCE IN MEDICINE

MISSIONARY WORK

There are regions, ***in partibus infidelium***, to which you will go as missionaries, carrying the gospel of loyalty to truth in the science and in the art of medicine, and your lives of devotion may prove to many a stimulating example.[20]

As willing to teach as to be taught.

You cannot afford to stand aloof from your professional colleagues in any place. Join their associations, mingle in their meetings, giving of the best of your talents, gathering here, scattering there; but everywhere showing that you are at all times faithful students, as willing to teach as to be taught.[26]

Masters in medicine.

Linacre and his successors, Caius, Harvey, and Glisson, brought the new learning from Italy, and, moreover, gave to English medicine that smack of culture, that tincture so peculiarly its own. From Holland a succeeding generation drew rich stores of knowledge, and the methods of teaching of the great Boerhaave were quickly adopted by English and Scotch students. From France came next the new science of Bichat, the new art of Laënnec, and the new methods of Louis. To another group the great teachers of Austria contributed accuracy in clinical methods, a zest for the study of special branches and a much-needed, at the time, therapeutic nihilism. The debt of the present generation to Germany can never be paid. Think of the scores who have found inspiration in our common master Virchow; and in the scientific study of disease the Fatherland is still in the van. The great republic of medicine knows and has known no national boundaries, and post-graduate study in other lands gives that broad mental outlook and that freedom from the trammels of local prejudice which have ever characterized the true physician.[2]

Powerful as was the effect of Louis's writings on American medicine, it cannot compare with the influence which he exerted through his pupils, who 'caught his clear accents, learned his great language, made him their model.' Of the great triumvirate of the French school of the fourth decade, Louis possessed a singular power of attracting hard-working capable men, and this in spite of the fact that his rivals and friends, Chomel and Andral, possessed more brilliant gifts of a certain kind. As a writer in the *Lancet* said (1872, II), 'Year by year fresh bands of students came to imbibe from his lips the instruction which their predecessors had abandoned with reluctance, till his academic progeny knew no distinction of race or even colour, but coalesced into a noble band of enthusiasts in the cause of medicine, of science, and of humanity.' In this academic progeny Louis's American pupils take a very unusual position. Among the thousands in the profession of this country who have during this century sought light and learning in the older lands, the group of young men who studied in Paris, between 1830 and 1840, had no predecessors and have had no successors. Partly because the time was ripe, and they were active agents in bringing the new art and science to the New World, partly owing to inherent capabilities, &c., but not a little because the brightest minds among them fell under the influence of Louis—they more than any others gave an impetus, which it still feels, to the scientific study of medicine in the United States. [30]

Louis: his influence through his pupils.

SILENCE AND SELF-CONTROL

AEQUANIMITAS

Let me recall to your minds an incident related of that best of men and wisest of rulers, Antoninus Pius, who, as he lay dying in his home at Lorium in Etruria, summed up the philosophy of life in the watchword, ***Aequanimitas***. As for him, about to pass ***flammantia moenia mundi*** (the flaming ramparts of the world), so for you, fresh from Clotho's spindle, a calm equanimity is the desirable attitude.[20]

The careless tongue.

'Well, so have I, and you ought always to put the most charitable construction on such remarks; the same people when I come back will probably say I have returned. Sometimes remarks of this sort are made carelessly, as men trample upon worms; sometimes from wantonness, as boys pull off the wings of flies and pierce them with pins; sometimes for spite, as we kill fleas; sometimes for experiment, as philosophers torture dogs; but seldom from wickedness, as pagans skin saints, and as Christians skin one another.'[12] (Bassett.)

The unruly member.

Things medical and gruesome have a singular attraction for many people, and in the easy days of convalescence a facile-tongued nurse may be led on to tell of 'moving incidents' in ward or theatre, and once untied, that unruly member is not apt to cease wagging with the simple narration of events.'[15]

The discreet nurse.

To talk of diseases is a sort of Arabian Nights' entertainment to which no discreet nurse will lend her talents.[15]

Imperturbability.

In a true and perfect form, imperturbability is indissolubly associated with wide experience and an intimate knowledge of the varied aspects of disease. With such advantages he is so equipped that no eventuality can disturb the mental equilibrium of the physician; the possibilities are always manifest, and the course of action clear.[20]

Imperturbability means coolness and presence of mind under all circumstances, calmness amid storm,

clearness of judgement in moments of grave peril, immobility, impassiveness, or, to use an old and expressive word, phlegm. It is the quality which is most appreciated by the laity, though often misunderstood by them; and the physician who has the misfortune to be without it, who betrays indecision and worry, and who shows that he is flustered and flurried in ordinary emergencies, loses rapidly the confidence of his patients. [20]

♁

Imperturbability often mistaken for hardness.

From its very nature this precious quality (imperturbability) is liable to be misinterpreted, and the general accusation of hardness, so often brought against the profession, has here its foundation. [20]

♁

Value of callousness.

Keen sensibility is doubtless a virtue of high order, when it does not interfere with steadiness of hand or coolness of nerve; but for the practitioner in his working-day world, a callousness which thinks only of the good to be effected, and goes ahead regardless of smaller considerations, is the preferable quality. [20]

♁

Failure.

It is sad to think that, for some of you, there is in store disappointment, perhaps failure. You cannot hope, of course, to escape from the cares and anxieties incident to professional life. Stand up bravely, even against the worst. [20]

♁

Vasomotor control.

The first essential is to have your nerves well in hand. Even under the most serious circumstances, the physician or surgeon who allows 'his outward

action to demonstrate the native act and figure of his heart in complement extern,' who shows in his face the slightest alteration, expressive of anxiety or fear, has not his medullary centres under the highest control, and is liable to disaster at any moment. I have spoken of this to you on many occasions, and have urged you to educate your nerve centres so that not the slightest dilator or contractor influence shall pass to the vessels of your face under any professional trial. [20]

♁

Value of an inscrutable face.

Far be it from me to urge you, ere Time has carved with his hours those fair brows, to quench on all occasions the blushes of ingenuous shame, but in dealing with your patients emergencies demanding these should certainly not arise, and at other times an inscrutable face may prove a fortune. [20]

♁

The silent workers.

And in closing, may I say a few words to the younger practitioners in the audience whose activities will wax, not wane, with the growing years of the century which opens so auspiciously for this school, for this city, and for our country. You enter a noble heritage, made so by no efforts of your own, but by the generations of men who have unselfishly sought to do the best they could for suffering mankind. Much has been done, much remains to do ; a way has been opened, and to do the possibilities in the scientific development of medicine there seems to be no limit. Except in its application, as general practitioners, you will not

have much to do with this. Yours is a higher and more sacred duty: think not to light a light before men that they may see your good works; contrariwise, you belong to the great army of quiet workers, physicians and priests, sisters and nurses, all the world over, the members of which strive not, neither do they cry, nor are their voices heard in the streets, but to them is given the ministry of consolation in sorrow, need, and sickness. Like the ideal wife of whom Plutarch speaks, the best doctor is often the one of whom the public hears the least; but nowadays, in the fierce light that beats upon the hearth, it is increasingly difficult to lead the secluded life in which our best work is done. To you the silent workers of the ranks, in villages and country districts, in the slums of our large cities, in the mining camps and factory towns, in the homes of the rich, and in the hovels of the poor, to you is given the harder task of illustrating with your lives the Hippocratic standards of learning, of sagacity, of humanity, and of probity. Of learning, that you may apply in your practice the best that is known in our art, and that with the increase in your knowledge there may be an increase in that priceless endowment of sagacity, so that to all, everywhere, skilled succour may come in the hour of need. Of a humanity, that will show, in your daily life, tenderness and consideration to the weak, infinite pity to the suffering, and broad charity to all. Of a probity, that will make you under all circumstances true to yourselves, true to your high calling, and true to your fellow man.[24]

PATIENT DEVOTION TO DUTY AND HIGH IDEALS

THE CALL OF LIFE

Chief among the hard sayings of the Gospels is the declaration, He that loveth father or mother or son or daughter more than Me is not worthy of Me. Yet the Spirit has made possible its acceptance, and that which is responsible for Christianity as it is—or rather, perhaps, as it was—is the same which in all ages has compelled men to follow ideals, even at the sacrifice of the near and dear ones at home. In varied tones, to all, at one time or another, the call comes; to one, to forsake all and follow Him; to another, to scorn delights and live the laborious days of a student; to the third, to renounce all in the life Sannyasi. Many are the wand-bearers, few are the mystics, as the old Greek has it, or, in the words which we know better, 'many are called, but few are chosen.' The gifts were diversified, but the same spirit animated the 'flaming heart of St. Theresa,' the patient soul of Palissy the potter, and the mighty intellect of John Hunter. [12]

The busy, useful, and happy life.

. . . What I mean by 'better women' is that the eyes of your souls have been opened, the range of your sympathies has been widened, and your characters have been moulded by the events in which you have been participators during the past two years. [14]

♁

Practically there should be for each of you a busy, useful, and happy life; more you cannot expect; a greater blessing the world cannot bestow. [14]

♁

Busy you will certainly be, as the demand is great, both in private and public, for women with your training.

Useful your lives must be, as you will care for those who cannot care for themselves, and who need about them, in the day of tribulation, gentle hands and tender hearts. [14]

♁

A debt to our times.

And happy lives shall be yours, because busy and useful; having been initiated into the great secret that happiness lies in absorption in some vocation which satisfies the soul; that we have here to add what we can *to*, not to get what we can *from*, life. [14]

♁

Great men.

'I am glad I know what great men are. I am glad I know of what they are made, and how they made themselves great, though this knowledge has broken the last of my household gods; yet it has taken away the flaming sword that stood before the gates of this Paradise, where may still be seen the track of the serpent and of the devil himself, so I will keep out of bad company.' [12] (Bassett.)

Nowhere in ancient history, sacred or profane, do we find instances of the devoted heroism of women such as dot the annals of the Catholic Church, or such as can be paralleled in our own century. Tender maternal affection, touching filial piety, were there; but the spirit abroad was that of Deborah not of Rizpah, of Jael not Dorcas.[14] Women: old and new.

The saddest lament in Oliver Wendell Holmes's poems is for the voiceless,— The voiceless.

'for those who never sing,
But die with all their music in them.'

The extracts which I have read show Dr. Bassett to have been a man of no ordinary gifts, but he was among the voiceless of the profession. Nowadays, environment, the opportunity for work, the skirts of happy chance, carry men to the summit. To those restless spirits who have had ambition without opportunities, and ideals not realizable in the world in which they move, the story of his life may be a solace. I began by saying that I would tell you of a man of whom you had never heard, of a humble student in a little town in Alabama. What of the men whom he revered, and for whom in 1836 he left wife and children? Are they better known to us? To-day scarcely one of those whom he mentions touches us with any firmness from the past. Of a majority of them it may be said, they are as though they had not been. Velpeau, Andral, Broussais, the great teachers whom Bassett followed, are shadowy forms (almost as indistinct as the pupil),

dragged out to the daylight by some *laudator temporis acti*, who would learn philosophy in history. To have striven, to have made an effort, to have been true to certain ideals—these alone are worth the struggle. Now and again in a generation, one or two snatch something from dull oblivion; but for the rest of us, sixty years?—we, too, are with Bassett and his teachers—and

> 'no one asks
> Who or what we have been,
> More than that he asks what waves,
> In the moonlit solitudes mild
> Of the midmost ocean, have swelled,
> Foam'd for a moment, and gone.'[12]

Visions of an Agnostic.

To a friend Bassett writes on the date of April 5:—

'This world has never occupied a large share of my attention or love. I have asked but little of it, and got but little of what I asked. It has for many years been growing less and less in my view, like a receding spirit in space; but no better land has appeared to my longing vision; what lies beyond me has become insignificant, before me it is a vast interminable void, but not a cheerless one, as it is full of pleasant dreams and visions and glorious hopes. I have covered it with the landscape of Claude, and peopled it with the martyrs of science, the pioneers of truth, the hound-hunted and crucified of this world, that have earned and then asked for bread and received a serpent—all who have suffered for the truth. How glorious it is to contemplate in the future these time-buffeted at rest, with their lacerated feelings soothed as mine have been this day by the tender regard your wife has manifested for my future well-being.'[12]

The utility cry.

In the older States utility is no longer regarded as the test of fitness, and the value of the intellectual life has risen enormously in every department. Germany must be our model in this respect. She is great because she has a large group of men pursuing pure science with unflagging industry, with self-denying zeal, and with high ideals. No secondary motives sway their minds, no cry reaches them in the recessesof their laboratories, 'Of what practical utility is your work?' but, unhampered by social or theological prejudices, they have been enabled to cherish 'the truth which has never been deceived—that complete truth which carries with it the antidote against the bane and danger which follow in the train of half-knowledge.'[21] (Helmholtz.)

The three great lessons of life.

A conscientious pursuit of Plato's ideal perfection may teach you the three great lessons of life. You may learn to consume your own smoke. The atmosphere is darkened by the murmurings and whimperings of men and women over the non-essentials, the trifles that are inevitably incident to the hurly-burly of the day's routine. Things cannot always go your way. Learn to accept in silence the minor aggravations, cultivate the gift of taciturnity and consume your own smoke with an extra draught of hard work, so that those about you may not be annoyed with the dust and soot of your complaints. More than any other the practitioner of medicine may illustrate the second great lesson, that we are here not to get all we can out of life for ourselves, but to try to make the lives of others happier. This

is the essence of that oft-repeated admonition of Christ, 'He that findeth his life shall lose it, and he that loseth his life for My sake shall find it,' on which hard saying if the children of this generation would only lay hold, there would be less misery and discontent in the world. It is not possible for any one to have better opportunities to live this lesson than you will enjoy. The practice of medicine is an art, not a trade; a calling, not a business; a calling in which your heart will be exercised equally with your head. Often the best part of your work will have nothing to do with potions and powders, but with the exercise of an influence of the strong upon the weak, of the righteous upon the wicked, of the wise upon the foolish. To you, as the trusted family counsellor, the father will come with his anxieties, the mother with her hidden grief, the daughter with her trials, and the son with his follies. Fully one-third of the work you do will be entered in other books than yours. Courage and cheerfulness will not only carry you over the rough places of life, but will enable you to bring comfort and help to the weak-hearted and will console you in the sad hours when, like Uncle Toby, you have 'to whistle that you may not weep.'[24]

♂

The student life.

Learn to love the freedom of the student life, only too quickly to pass away; the absence of the coarser cares of after days, the joy in comradeship, the delight in new work, the happiness in knowing that you are making progress. Once only can you enjoy these pleasures. The seclusion of a student life is

not always good for a man, particularly for those of you who will in after years engage in general practice, since you will miss that facility of intercourse upon which often the doctor's success depends. On the other hand sequestration is essential for those of you with high ambitions proportionate to your capacity. It was for such that St. Chrysostom gave his famous counsel: 'Depart from the highways and transplant thyself into some enclosed ground, for it is hard for a tree that stands by the wayside to keep its fruit till it be ripe.'[24]

♁

Ideals, value of.

Sitting in Lincoln Cathedral and gazing at one of the loveliest of human works—for such the angel choir has been said to be—there arose within me, obliterating for the moment the thousand heraldries and twilight saints and dim emblazonings, a strong sense of reverence for the minds which had conceived and the hands which had executed such things of beauty. What manner of men were they who, in those (to us) dark days, could build such transcendent monuments? What was the secret of their art? By what spirit were they moved? Absorbed in thought, I did not hear the beginning of the music, and then, as a response to my reverie and arousing me from it, rang out the clear voice of the boy leading the antiphon, 'That Thy power, Thy glory, and the mightiness of Thy kingdom might be known unto men.' Here was the answer.[22]

♁

Always seek your own interests, make of a high and sacred calling a sordid business, regard your

fellow creatures as so many tools of trade, and, if your heart's desire is for riches, they may be yours; but you will have bartered away the birthright of a noble heritage, traduced the physician's well-deserved title of the Friend of Man, and falsified the best traditions of an ancient and honourable guild.[22]

♁

And though this course does not necessarily bring position or renown, consistently followed it will at any rate give to your youth an exhilarating zeal and a cheerfulness which will enable you to surmount all obstacles—to your maturity a serene judgement of men and things, and that broad charity without which all else is nought—to your old age that greatest of blessings, peace of mind; a realization, maybe, of the prayer of Socrates for the beauty in the inward soul and for unity of the outer and the inner man; perhaps, of the promise of St. Bernard, *pax sine crimine*, *pax sine turbine*, *pax sine rixa*.[22]

♁

And, if the fight is for principle and justice, even when failure seems certain, where many have failed before, cling to your ideal, and, like Childe Roland before the dark tower, set the slug-horn to your lips, blow the challenge, and calmly await the conflict.[20]

♁

Not that we all live up to the highest ideals, far from it—we are only men. But we have ideals, which mean much, and they are realizable, which means more.[25]

Of course there are Gehazis among us who serve for shekels, whose ears hear only the lowing of the oxen and the jingling of the guineas, but these are exceptions. The rank and file labour earnestly for your good, and self-sacrificing devotion to your interests animates our best work.[25] **The Gehazis.**

No other profession can boast of the same unbroken continuity of methods and of ideals. We may indeed be justly proud of our apostolic succession. Schools and systems have flourished and gone, schools which for generations have swayed the thought of our guild; the philosophies of one age have become the absurdities of the next, and the foolishness of yesterday has become the wisdom of to-morrow; through long ages which were slowly learning what we are hurrying to forget, amid all the changes and chances of twenty-five centuries, the profession has never lacked men who have lived up to these Greek ideals. They were those of Galen and Aretaeus, of men of the Alexandrian and Byzantine schools, of the best of the Arabians, of the men of the Renaissance, and they are ours to-day.[23] **Methods and ideals.**

A second distinctive feature is the remarkable solidarity. Of no other profession is the word 'universal' applicable in the same sense. The celebrated phrase used of the Catholic Church is in truth much more appropriate when applied to medicine. It is not the prevalence of disease or the existence everywhere of special groups of men

to treat it that betokens this solidarity, but it is the identity throughout the civilized world of our ambitions, our methods and our work. To wrest from nature the secrets which have perplexed philosophers in all ages, to track to their sources the causes of disease, to correlate the vast stores of knowledge, that they may be quickly available for the prevention and cure of disease—these are our ambitions. To carefully observe the phenomena of life in all its phases, normal and perverted, to make perfect that most difficult of all arts, the art of observation, to call to aid the science of experimentation, to cultivate the reasoning faculty, so as to be able to know the true from the false—these are our methods. To prevent disease, to relieve suffering, and to heal the sick—this is our work. The profession in truth is a sort of guild or brotherhood, any member of which can take up his calling in any part of the world and find brethren whose language and methods and whose aims and ways are identical with his own.[23]

♂

Thirdly, its progressive character. Based on science, medicine has followed and partaken of its fortunes, so that in the great awakening which has made the nineteenth memorable among centuries, the profession received a quickening impulse more powerful than at any period in its history. With the sole exception of the mechanical sciences, no other department of human knowledge has undergone so profound a change—a change so profound that we who have grown up in it have but slight

appreciation of its momentous character. And not only in what has been actually accomplished in unravelling the causes of disease, in perfecting methods of prevention, and in wholesale relief of suffering, but also in the unloading of old formulae, and in the substitution of the scientific spirit of free inquiry for cast-iron dogmas, we see a promise of still greater achievement and of a more glorious future.[23]

♁

And lastly, the profession of medicine is distinguished from all others by its singular beneficence. It alone does the work of charity in a Jovian and God-like way, dispensing with a free hand truly Promethean gifts. There are those who listen to me who have seen three of the most benign endowments granted to the race since the great Titan stole fire from heaven. Search the scriptures of human achievement and you cannot find any way to equal in beneficence the introduction of anaesthesia, sanitation, with all that it includes, and asepsis—a short half-century's contribution towards the practical solution of the problems of human suffering, regarded as eternal and insoluble. We form almost a monopoly or trust in this business. Nobody else comes into active competition with us, certainly not the other learned professions which continue along the old lines. Every new year sees some new conquest, so that we have ceased to wonder. The work of half a dozen men, headed by Laveran, has made waste places of the earth habitable, and the wilderness to blossom like the

rose. The work of Walter Reed and his associates will probably make yellow fever as scarce in the Spanish Main as is typhus with us. There seems to be no limit to the possibilities of scientific medicine, and while philanthropists are turning to it as to the hope of humanity, philosophers see, as in some far-off vision, a science from which may come in the prophetic words of the Son of Sirach, 'Peace over all the earth.'[23]

Patience.

It has been said that 'in patience ye shall win your souls,' and what is this patience but an equanimity which enables you to rise superior to the trials of life?[20]

Persistency in the midst of loneliness.

Your very hopes may have passed out of sight, as did all that was near and dear to the patriarch at the Jabbok ford, and, like him, you may be left to struggle in the night alone. Well for you, if you wrestle on, for in persistency lies victory, and with the morning may come the wished-for blessing.[20]

Defeat.

But not always; there is a struggle with defeat which some of you will have to bear, and it will be well for you in that day to have cultivated a cheerful equanimity.[20]

Face disaster boldly.

Even with disaster ahead and ruin imminent, it is better to face them with a smile, and with the head erect, than to crouch at their approach.[20]

Heroism and devotion.

The sick love-child of Israel's sweet singer, the plague-stricken hopes of the great Athenian states-

man, Elpenor, bereft of his beloved Artemidora, and 'Tully's daughter mourned so tenderly,' are not of any age or any race—they are here with us to-day, with the Hamlets, the Ophelias, and the Lears. Amid an eternal heritage of sorrow and suffering our work is laid, and this eternal note of sadness would be insupportable if the daily tragedies were not relieved by the spectacle of the heroism and devotion displayed by the actors.[45]

Devotion to duty.

Quickly there arises the memory of the men who have done so much for British medicine in that great empire (India). Far from their homes, far from congenial surroundings, and far from the stimulus of scientific influences, Annesley, Ballingall, Twining, Morehead, Waring, Parkes, Cunningham, Lewis, Vandyke Carter, and many others have upheld the traditions of Harvey and Sydenham.[4]

Recognize the poetry of life in the humdrum routine.

Nothing will sustain you more potently in your humdrum routine, as perhaps it may be thought, than the power to recognize the true poetry of life—the poetry of the commonplace, of the ordinary man, of the plain, toil-worn woman, with their loves and their joys, their sorrows and their griefs. The comedy, too, of life will be spread before you, and nobody laughs more often than the doctor at the pranks Puck plays upon the Titanias and the Bottoms among his patients. The humorous side is really almost as frequently turned towards him as the tragic. Lift up one hand to heaven and thank your stars if they have given you the proper

Sense of humour an essential.

sense to enable you to appreciate the inconceivably droll situations in which we catch our fellow creatures. Unhappily, this is one of the free gifts of the gods, unevenly distributed, not bestowed on all, or on all in equal portions. In undue measure it is not without risk, and in any case in the doctor it is better appreciated by the eye than expressed on the tongue. Hilarity and good humour, a breezy cheerfulness, a nature 'sloping towards the southern side,' as Lowell has it, help enormously both in the study and in the practice of medicine. To many of a sombre and sour disposition it is hard to maintain good spirits amid the trials and tribulations of the day, and yet it is an unpardonable mistake to go about among patients with a long face.[45]

A nature 'sloping towards the southern side.'

CHARITY AND FRATERNITY IN MEDICINE

CHARITY

It may be that in the hurry and bustle of a busy life I have given offence to some—who can avoid it? Unwittingly I may have shot an arrow o'er the house and hurt a brother—if so, I am sorry, and I ask his pardon. So far as I can read my heart I leave you in charity with all. I have striven with none, not for the reason given by Walter Savage Landor, because none was worth the strife, but because I have had a deep conviction of the hatefulness of strife, of its uselessness, of its disastrous effects, and a still deeper conviction of the blessings that come with unity, peace, and concord. And I would give to each one of you, my brothers—you who hear me now, and to you who may elsewhere read my words—to you who do our greatest work, labouring incessantly for small rewards in towns and country places—to you the more favoured ones who have special fields of work—to you teachers and professors and scientific workers—to one and all, throughout the length and breadth of the land—I give a single word as my parting commandment:—'IT IS NOT HIDDEN FROM THEE, NEITHER IS IT FAR OFF. IT IS NOT IN HEAVEN, THAT THOU SHOULDEST SAY, WHO SHALL GO UP FOR US TO HEAVEN, AND BRING IT UNTO US, THAT WE MAY HEAR IT, AND DO IT? NEITHER IS IT BEYOND THE SEA, THAT THOU SHOULDEST SAY, WHO SHALL GO OVER THE SEA FOR US, AND BRING IT UNTO US THAT WE MAY HEAR IT, AND DO IT? BUT THE WORD IS VERY NIGH UNTO THEE, IN THY MOUTH, AND IN THY HEART, THAT THOU MAYEST DO IT'—CHARITY.[41]

Quarrels of doctors.

The quarrels of doctors make a pretty chapter in the history of medicine. Each generation seems to have had its own. The Coans and Cnidians, the Arabians and Galenists, the humoralists and the solidists, the Brunonians and the Broussaisians, the homoeopaths and the regulars, have in different centuries rent the robe of Aesculapius. But these larger quarrels are becoming less and less intense, and in the last century no new one of moment sprang up; and it is safe to predict that in the present century, when science has fully leavened the dough of homoeopathy, the great breach of our day will be healed. [16]

♁

So far as my observation goes, the fault lies with the older men. The young fellow, if handled aright and made to feel that he is welcomed, not an intruder to be shunned, is only too ready to hold out the hand of fellowship. The medical society comes in here as professional cement. The meeting in a friendly, social way, with a free and open discussion of affairs, fosters a spirit that refuses to recognize in differences of opinion on the non-essentials of life a cause of personal animosity or ill-feeling. An aptitude of mind habitually friendly, more particularly to the young man, even though you feel him to be the David to whom your kingdom may fall; a little of the old-fashioned courtesy which makes a man shrink from wounding the feelings of a brother practitioner, in honour preferring another;—with such a spirit abroad in the society and among its older men, there is no

room for envy, hatred, malice, or any uncharitableness.[16]

The practice of medicine calls equally for the exercise of the heart and the head; and when a man has done his best, to have his motives misunderstood and his conduct of a case harshly criticized, not only by the family, but by a colleague who has been called in, small wonder, when the opportunity arises, if the old Adam prevails and he pays in kind. So far as my observation goes, there are three chief causes for the quarrels of doctors. The first is lack of proper friendly intercourse, by which alone we can know our colleagues. It is the duty of the older man to look on the younger one who settles near him not as a rival, but as a son. He will do to you just what you did to the older practitioner, when, as a young man, you started—get a good many of your cases; but if you have the sense to realize that this is inevitable, unavoidable, and the way of the world, and if you have the sense to talk over, in a friendly way, the first delicate situation that arises, the difficulties will disappear and recurrences of a misunderstanding may be made impossible. The young men should be tender with the sensibilities of their seniors, deferring to their judgement and taking counsel with them.[41]

Friendly intercourse needed.

Whether a man will treat his professional brethren in a gentlemanly way or in a narrow illiberal spirit is partly a matter of temperament, partly a matter of training. If we had only to deal with one another

Training an important factor.

the difficulties would be slight, but it must be confessed that the practice of medicine among our fellow creatures is often a testy and choleric business. When one has done his best, or when a mistake has arisen through lack of special knowledge, but more particularly when, as so often happens, our heart's best sympathies have been engaged, to be misunderstood by the patient and his friends, to have evil motives imputed and to be maligned, is too much for human endurance, and justifies a righteous indignation.[23]

♁

Charity.

When a man reaches the climacteric, and has long passed beyond the professional stage of his reputation, we who are still 'in the ring' must exercise a good deal of charity, and discount largely the *on dits* which indiscreet friends circulate.[6]

♁

Drugs—the most uncertain element in our art.

It is too late in this day of scientific medicine to prattle of such antique nonsense as is indicated in the 'pathies.' We have long got past the stage when any 'system' can satisfy a rational practitioner, long past the time when a difference of belief in the action of drugs—the most uncertain element in our art—should be allowed to separate men with the same noble traditions, the same hopes, the same aims and ambitions. It is not as if our homoeopathic brothers are asleep; far from it, they are awake—many of them at any rate—to the importance of the scientific study of disease, and all of them must realize the anomaly of their position. It is distressing to think that so many good men live isolated,

Homoeopathy.

in a measure, from the great body of the profession. The original grievous mistake was ours—to quarrel with our brothers over infinitesimals was a most unwise and stupid thing to do. That we quarrel with them now is solely on account of the old Shibbolethunder which they practise. Homoeopathy is as inconsistent with the new medicine as is the old-fashioned polypharmacy, to the destruction of which it contributed so much. The rent in the robe of Aesculapius, wider in this country than elsewhere, could be repaired by mutual concessions —on the one hand by the abandonment of special designations, and on the other by an intelligent toleration of therapeutic vagaries which in all ages have beset the profession, but which have been mere flies on the wheels of progress.[41]

Mutual concessions necessary.

♁

If young graduates could be taken more frequently as assistants or partners, the work of the profession would be much lightened, and it would promote amity and good fellowship. A man of whom you may have heard as the incarnation of unprofessional conduct, and who has been held up as an example of all that was pernicious, may be, in reality, a very good fellow, the victim of petty jealousies, the mark of the arrows of a rival faction; and you may be surprised to find that he loves his wife, and is devoted to his children, and that there are people who respect and esteem him. After all, the attitude of mind is the all-important factor in the promotion of concord. When a man is praised, or when

Attitude of mind the all-essential to promotion of concord.

a young man has done a good bit of work in your special branch, be thankful—it is for the common good. Envy, that pain of the soul, as Plato calls it, should never for a moment afflict a man of generous instincts who has a sane outlook in life. The men of rival schools should deliberately cultivate the acquaintance of each other and encourage their students and the junior teachers to fraternize. If you hear that a young fellow just starting has made mistakes or is a little 'off colour,' go out of your way to say a good word to him, or for him. It is the only cure; any other treatment only aggravates the malady.[41]

Say a good word for the 'off colour' man.

Uncharitableness most pernicious of all vices.

The most widespread, the most pernicious of all vices, equal in its disastrous effects to impurity, much more disastrous often than intemperance, because destructive of all mental and moral nobility, as are the others of bodily health, is uncharitableness—the most prevalent of modern sins, peculiarly apt to beset all of us, and the chief enemy to concord in our ranks. Oftentimes it is a thoughtless evil, a sort of *tic* or trick, an unconscious habit of mind and tongue which gradually takes possession of us. No sooner is a man's name mentioned than something slighting is said of him, or a story is repeated which is to his disadvantage, or the involuntary plight of a brother is ridiculed, or even his character is traduced. In chronic and malign offenders literally, 'with every word a reputation dies.' The work

A thoughtless evil at times.

of a school is disparaged, or the character of the work in a laboratory is belittled; or it may be only the faint praise that damns, not the generous meed from a full and thankful heart. We have lost our fine sense of the tragic element in this vice, and of its debasing influence on the character. It is interesting that Christ and the Apostles lashed it more unsparingly than any other. Who is there among us who does not require every day to take to heart that counsel of perfection: 'Judge not according to the appearance, but judge righteous judgement'? One of the apostles of our profession, Sir Thomas Browne, has a great thought on the question:—

'The faint praise that damns.'

'While thou so hotly disclaimest the devil, be not guilty of diabolism. Fall not into one name with that unclean spirit, nor act his nature whom thou so much abhorrest—that is, to accuse, calumniate, backbite, whisper, detract, or sinistrously interpret others. Degenerous depravities, and narrow-minded vices! not only below St. Paul's noble Christian, but Aristotle's true gentleman. Trust not with some that the Epistle of St. James is apocryphal, and so read with less fear that stabbing truth, that in company with this vice thy religion is in vain. Moses broke the tables without breaking of the law; but where charity is broke the law itself is shattered, which cannot be whole without love, which is the fulfilling of it. Look humbly upon thy virtues; and though thou art rich in some, yet think thyself poor and naked without that crowning grace, which thinketh no evil, which envieth not, which beareth, hopeth, believeth, endureth all things. With these sure graces, while busy tongues are crying out for a drop

of cold water, mutes may be in happiness, and sing the Trisagion in heaven.'[44]

♁

The honest heart.

I say advisedly an honest heart—the honest head is prone to be cold and stern, given to judgement, not mercy, and not always willing to entertain that true charity which, while it thinketh no evil, is anxious to put the best possible interpretation upon the motives of a fellow worker. It will foster, too, an attitude of generous, friendly rivalry untinged by the green peril, jealousy, that is the best preventive of the growth of a bastard scientific spirit—loving seclusion and working in a lock-and-key laboratory, as timorous of light as is a thief.[45]

♁

Charity.

The hardest lesson of all to learn is that the law of the higher life is only fulfilled by love, i. e. charity. Many a physician whose work is in a daily round of beneficence will say hard things and think hard things of a colleague. No sin will so easily beset you as uncharitableness towards your brother practitioner. So strong is the personal element in the practice of medicine, and so many are the wagging tongues in every parish, that evil-speaking, lying, and slandering find a shining mark in the lapses and mistakes which are inevitable in our work. There is no reason for discord and disagreement, and the only way to avoid trouble is to have two plain rules. From the day you begin practice never under any circumstances listen to a tale told

to the detriment of a brother practitioner. And when any dispute or trouble does arise, go frankly, ere sunset, and talk the matter over, in which way you may gain a brother and a friend. Very easy to carry out, you may think! Far from it; there is no harder battle to fight. Theoretically there seems to be no difficulty, but when the concrete wound is rankling, and after Mrs. Jones has rubbed it in with cayenne pepper by declaring that Dr. J. told her in confidence of your shocking bungling, your attitude of mind is that you would rather see him in purgatory than make advances towards reconciliation. Wait until the day of your trial comes and then remember my words.[24]

Tittle-tattle.

It is the confounded tales of patients that so often set us by the ears, but if a man makes it a rule never under any circumstances to believe a story told by a patient to the detriment of a fellow practitioner, even if he thinks it to be true, though the measure he metes may not be measured to him again, he will have the satisfaction of knowing that he has closed the ears of his soul to ninety-nine lies, and to have missed the hundredth truth will not hurt him.[16]

♀

Women, our greatest friends and our greatest enemies, are the chief sinners; and while one will exhaust the resources of the language in describing our mistakes and weaknesses, another will laud her pet doctor so indiscriminately that all others come under a sort of oblique condemnation. *Feminae*

sunt medicorum tubae is an old and true saying. It is hard to say whether, as a whole, we do not suffer just as much from the indiscriminate praise. But against this evil we are helpless. Far otherwise, when we do not let the heard word die; not to listen is best, though that is not always possible, but silence is always possible, than which we have no better weapon in our armoury against evil-speaking, lying, and slandering. The bitterness is when the tale is believed and a brother's good name is involved. Then begins the worst form of ill-treatment that the practitioner receives, and at his own hands. He allows the demon of resentment to take possession of his soul, when five minutes' frank conversation might have gained a brother. In a small or large community what more joyful than to see the brethren dwelling together in unity? The bitterness, the rancour, the personal hostility which many of us remember in our younger days have been largely replaced by a better feeling, and while the golden rule is not always, as it should be, our code of ethics, we have certainly become more charitable the one towards the other.[23]

The wagging tongues.

And the third cause of uncharitableness is the wagging tongues of others who are too often ready to tell tales and make trouble between doctors. There is only one safe rule, never listen to a patient who begins with a story about the carelessness and inefficiency of Dr. Blank. Shut him or her up with a snap, knowing full well that the same tale may be told of you a few months later. Fully half

of the quarrels of doctors are fomented by the tittle-tattle of patients, and the only safeguard is not to listen. Sometimes it is impossible to check the flow of imprecation and slander, and then apply the other rule—perfectly safe, and one which may be commended as a good practice—never believe what a patient tells you to the detriment of a brother, *even though you may think it to be true.*[41]

♁

Charity of the hospital.

In the hospital, we learn to scan gently our brother man, judging not, asking no questions, but meting out to all alike a hospitality worthy of the *Hôtel Dieu*, and deeming ourselves honoured in being allowed to act as its dispensers.[14]

♁

In the hospital, too, are daily before our eyes the problems which have ever perplexed the human mind; problems not presented in the dead abstract of books, but in the living concrete of some poor fellow in his last round, fighting a brave fight, but sadly weighed, and going to his account 'unhousel'd, disappointed, unanel'd, no reckoning made.'[14]

♁

The spirit of love.

Among the ancients, many had risen to the idea of forgiveness of enemies, of patience under wrong-doing, and even of the brotherhood of man; but the spirit of Love received its incarnation only with the ever memorable reply to the ever memorable question, Who is my neighbour?—a reply which has changed the attitude of the world.[14]

Romola the nurse.

Romola, the student, helping her blind father, and full of the pride of learning, we admire; Romola, the devotee, carrying in her withered heart woman's heaviest disappointment, we pity; Romola, the nurse, doing noble deeds amid the pestilence, rescuing those who were ready to perish, we love. [15]

The nurse.

There is no higher mission in this life than nursing God's poor. In so doing a woman may not reach the ideals of her soul; she may fall far short of the ideals of her head, but she will go far to satiate the longings of the heart from which no woman can escape. [15]

Dreams.

To each one of us at some time, I suppose, has come the blessed impulse to break away from all such ties and follow cherished ideals. Too often it is but a flash of youth, which darkens down with the growing years. Though the dream may never be realized, the impulse will not have been wholly in vain if it enables us to look with sympathy upon the more successful efforts of others. [15]

Art of giving.

May I say a word on the art of giving? The essence is contained in the well-known sentence:—'Let every man do according as he is disposed in his heart, not grudgingly, or of necessity.' Subscriptions to a cause which is for the benefit of the entire profession should truly be given as a man is disposed in his heart, not in his pocket, and assuredly not of necessity, but as a duty, even as a privilege, and as a pleasure. With the young among you the days of travail and distress are not

yet over, and to give would be wrong. It is sufficient for such to have the wish; the elder brothers will bear your share; only be sure to foster those generous impulses, which are apt to be intense in direct proportion to the emptiness of the purse.[10]

Beyond a modest competency the sensible doctor does not aspire, but in the profession of every state there is a third group, composed of a few men, who, dry-nursed by us, sometimes by the public, have become prosperous, perhaps wealthy. Freely they have received, freely they should give. It must be acknowledged, however, that the admonition of Sir Thomas Browne, 'should your riches increase, let your mind keep pace with them,' is not always regarded by them. There has been a good deal in the papers lately about the large fortunes left by doctors; but it has not been a pleasant feature to note, with scarcely an exception, either an entire neglect or a very beggarly remembrance of the profession in which these men had at any rate laid the foundation of their large fortunes.[10]

In conclusion, may I paraphrase those noble words of Aristotle, in which he laid down the duty of the citizen to the state, as also peculiarly appropriate in defining the obligations of the doctor to his calling? No physician has a right to consider himself as belonging to himself; but all ought to regard themselves as belonging to the profession, inasmuch as each is a part of the profession; and care for the part naturally looks to care for the whole.[10]

MEDICAL EDUCATION

The Teacher
The Student
The University
The Hospital

THE SEARCHER FOR KNOWLEDGE

'He who knows not, and knows not that he knows not, is a fool. Shun him.

He who knows not, and knows that he knows not, is simple. Teach him.' (*Arabian proverb.*)

Education: what it is.

What, after all, is education but a subtle, slowly-effected change, due to the action of the externals —of the written record of the great minds of all ages, of the beautiful and harmonious surroundings of nature and of art, and of the lives, good or ill, of our fellows?—these alone educate us, these alone mould the growing mind. [21]

♁

The complex, varied influences of art, of science, and of charity; of art, the highest development of which can come only with that sustaining love for ideals which 'burns bright or dim as each are mirrors of the fire for which all thirst'; of science, the cold logic of which keeps the mind independent and free from the toils of self-deception and half-knowledge; of charity, in which we of the medical profession, to walk worthily, must live and move and have our being. [21]

♁

Education.

At the outset appreciate clearly the aims and objects each one of you should have in view—a knowledge of disease and its cure, and a knowledge of yourself. The one, special education, will make you a practitioner of medicine; the other, an inner education, that may make you a truly good man, four-square and without a flaw. The one is extrinsic and is largely accomplished by teacher and tutor, by text and by tongue; the other is intrinsic and is the mental salvation to be wrought out by each one for himself. The first may be had without the second; any one of you may become an active practitioner, without ever having

sense enough to realize that through life you have been a fool; or you may have the second without the first, and without knowing much of the art, you may have the endowments of head and heart that make the little you do possess go very far in the community. What I hope to infect you with is a desire to have a due proportion of each. [24]

♁

What the profession is.

Some will tell you that the profession is underrated, unhonoured, underpaid, its members social drudges—the very last profession they would recommend a young man to take up. Listen not to these croakers; there are such in every calling, and the secret of their discontent is not hard to discover. The evils which they deprecate, and ascribe—it is difficult to say to whom—in themselves lie; evils, the seeds of which were sown when they were as you are now (students); sown in hours of idleness, in inattention to studies, in consequent failure to grasp those principles of their science without which the practice of medicine does indeed become a drudgery, for it degenerates into a business. I would rather tell you of a profession honoured above all others; one which, while calling forth the highest powers of the mind, brings you into such warm personal contact with your fellow men that the heart and sympathies of the coldest nature must needs be enlarged thereby. For, consider the practical outcome of all you gather; the active work for which your four years' study is a preparation. Will not your whole energies be spent in befriending the sick and

suffering? in helping those who cannot help themselves? in rescuing valuable lives from the clutch of grim death? in cheering the loving nurses of the sick, who often hang upon your words with a most touching trust? Aye! and in lessening the sad sum of human misery and pain by spreading, so far as in you lies, the knowledge of those grand laws of health transgressed so ignorantly and yet avenged so fatally?[31]

♁

The student:

Except it be a lover, no one is more interesting as an object of study than a student. Shakespeare might have made him a fourth in his immortal group. The lunatic with his fixed idea, the poet with his fine frenzy, the lover with his frantic idolatry, and the student aflame with the desire for knowledge are of 'imagination all compact.' To an absorbing passion, a whole-souled devotion, must be joined an enduring energy, if the student is to become a devotee of the grey-eyed goddess to whose law his services are bound. Like the quest of the Holy Grail, the quest of Minerva is not for all. For the one, the pure life; for the other, what Milton calls 'a strong propensity of nature.' Here again the student often resembles the poet—he is born, not made. While the resultant of two moulding forces, the accidental, external conditions, and the hidden, germinal energies, which produce in each one of us national, family, and individual traits, the true student possesses in some measure a divine spark which sets at naught their laws. . . . There are three unmistakable signs

by which you may recognize him . . . an absorbing desire to know the truth, an unswerving steadfastness in its pursuit, and an open, honest heart, free from suspicion, guile, and jealousy.[45]

how you may know him.

A word or two on method in study, though it is not an easy matter to discuss, for the very good reason that there is no one method suitable to all alike. Who will venture to settle upon so simple a matter as the best time for work? . . . The other day I asked Edward Martin, the well-known story-writer, what time he found best for work. 'Not in the evening, and never between meals!' was his answer, which may appeal to some of my hearers. . . . Outside of the asylum there are also the two great types, the student-lark who loves to see the sun rise, who comes to breakfast with a cheerful morning face and in hilarious spirits—two hours of work and half an hour's exercise before breakfast, never so 'fit' as at 6 a.m.! We all know the type. What a contrast to the student-owl with his saturnine morning face, thoroughly unhappy, cheated by the wretched breakfast-bell of the two best hours of the day for sleep, no appetite, and permeated with an unspeakable hostility to his *vis-à-vis*, whose morning garrulity and good humour are equally offensive. Only gradually, as the day wears on and his temperature reaches 98·2°, does he become endurable to himself and to others. But see him really awake at 10 p.m.! While the plethoric lark is in hopeless coma over his books, from which it is hard to rouse him suffi-

Method in study.

The time for study.

Two types of student.

ciently to get his boots off for bed, our lean owl-friend, Saturn no longer in the ascendant, with bright eyes and cheery face, is ready for four hours of anything you wish—deep study, or

'Heart affluence in discoursive talk,'

and by 2 a.m. he will undertake to unsphere the spirit of Plato. In neither a virtue, in neither a fault; we must recognize these two types of students, differently constituted owing possibly—though I have but little evidence for the belief—to thermal peculiarities.[45]

♂

Mind-training.

Get accustomed to test all sorts of book problems and statements for yourself, and take as little as possible on trust. The Hunterian 'Do not think, but try' attitude of mind is the important one to cultivate. The question came up one day, when discussing the grooves left on the nails after fever, how long it took for the nail to grow out, from root to edge. A majority of the class had no further interest; a few looked it up in books; two men marked their nails at the root with nitrate of silver, and a few months later had positive knowledge on the subject. They showed the proper spirit.[45]

♂

Concentration and thoroughness.

Men will not take time to get to the heart of a matter. After all, concentration is the price the modern student pays for success. Thoroughness is the most difficult habit to acquire, but it is the pearl of great price, worth all the worry and trouble

of the search. The dilettante lives an easy, butterfly life, knowing nothing of the toil and labour with which the treasures of knowledge are dug out of the past, or wrung by patient research in the laboratories.[45]

The dilettante.

♁

I have always been much impressed by the advice of St. Chrysostom: 'Depart from the highway and transplant thyself in some enclosed ground, for it is hard for a tree which stands by the wayside to keep her fruit till it be ripe.'[45]

Isolation.

♁

Concentration has its drawbacks. It is possible to become so absorbed in the problem of the 'enclitic δε,' or the structure of the flagella of the Trichomonas, or of the toes of the prehistoric horse, that the student loses the sense of proportion in his work, and even wastes a lifetime in researches which are valueless because not in touch with current knowledge. You remember poor Casaubon, in *Middlemarch*, whose painful scholarship was lost on this account. The best preventive to this is to get denationalized early. The true student is a citizen of the world, the allegiance of whose soul, at any rate, is too precious to be restricted to a single country. The great minds, the great works, transcend all limitations of time, of language, and of race, and the scholar can never feel initiated into the company of the elect until he can approach all of life's problems from the cosmopolitan standpoint.[45]

Concentration: its drawbacks.

Get denationalized early.

The self-conscious student.

A serious drawback in the student life is the self-consciousness, bred of too close devotion to books. A man gets shy, 'dysopic,' as old Timothy Bright calls it, and shuns the looks of men, and blushes like a girl. The strength of a student of men is to travel—to study men, their habits, character, mode of life, their behaviour under varied conditions, their vices, virtues, and peculiarities. Begin with a careful observation of your fellow students and of your teachers; then, every patient you see is a lesson in much more than the malady from which he suffers. Mix as much as you possibly can with the outside world, and learn its ways. The student societies, the students' union, the gymnasium, and the outside social circle should be cultivated systematically, to enable you to conquer the diffidence which goes with bookishness and which will prove a very serious drawback in after-life. I cannot too strongly impress upon the earnest and attentive men among you the necessity of overcoming this unfortunate failing in your student days. It is not easy for every one to reach a happy medium, and the distinction between a proper self-confidence and 'cheek,' particularly in junior students, is not always to be made. The latter is met with chiefly among the student pilgrims who, in travelling down the Delectable Mountains, have gone astray and have passed to the left hand, where lieth the country of Conceit, the country in which you remember the brisk lad Ignorance met Christian.[45]

Study men.

'Cheek.'

Two letters from Louis to James Jackson, Sr., show how important he thought a prolonged period of study was for a young man. He says:— The waiting years.

'I pointed out to him (James Jackson, Jr.) the advantage it would be for science and for himself if he would devote several years exclusively to the observation of diseases. I now retain the same opinion and am strengthened in it; for the more I become acquainted with, and the more I notice him applying himself to observation, the more I am persuaded that he is fitted to render real service to science, to promote its progress. I find that he would be well pleased to follow for a certain period the vocation for which nature has fitted him; but he has stated to me that there are many difficulties which would prevent his devoting himself exclusively to observation for several years. But can these difficulties be insurmountable?'

And again:—

'Let us suppose that he should pass four more years without engaging in the practice of medicine, what a mass of positive knowledge will he have acquired! How many important results will he have been able to publish to the world during that period! After that he must necessarily become one of the bright lights of his country; others will resort to him for instruction, and he will be able to impart it with distinguished honour to himself. If all things be duly weighed, it will appear that he will soon redeem the four years, which men of superficial views will believe him to have lost.'

In another letter, the following year, just before young Jackson's departure from Paris, he refers again to this question, and urges Dr. Jackson to allow his son to devote himself exclusively to

observation for several years in Boston. The extract from this letter is worth quoting:—

'Think for a moment, sir, of the situation in which we physicians are placed. We have no legislative chambers to enact laws for us. We are our own lawgivers; or rather, we must discover the laws on which our profession rests. We must *discover* them and not invent them; for the laws of nature are not to be invented. And who is to discover these laws? Who should be a diligent observer of nature for this purpose, if not the son of a physician, who has himself experienced the difficulties of the observation of disease, who knows how few minds are fitted for it, and how few have at once the talents and inclination requisite for the task? The inclination especially, for this requires that the observer should possess a thorough regard for truth, and a certain elevation of mind, or rather of character, which we rarely meet with. All this is united in your son. You ought—for in my opinion it is a duty—you ought to consecrate him for a few years to science. This, sir, is my conviction, and I hope it will be yours also. I know very well that every one will not be of the same opinion; but what matters it, if it be yours?—if you look upon a physician, as I do, as holding a sacred office, which demands greater sacrifices than are to be made in any other profession?'[30]

'Laws of nature must be discovered, not invented.' (Louis.)

Thorough regard for truth and elevation of mind essentials to the accurate observer of disease.

♂

Louis and Andral compared.

In one of his (W. W. Gerhard) letters to his brother, dated January 18, 1832, he says:—

'Dr. Louis is delivering an interesting clinic at La Pitié; he is a remarkable man, very different from the physicians of England or America, and remarkable even at Paris by the strict mathematical accuracy with which he arrives at his

results; he is not a brilliant man, not of the same grade of intellect as his colleague at La Pitié, Andral.'

In another letter he gives an account of his day's work:—

A medical student's day at the French school in the thirties.

'The morning from seven to ten is occupied with the visit and clinic at the hospital; there are several distinct clinics now in actual progress; each of them has its advantages. I shall vary my attendance at the various hospitals, and select those lecturers who are of real merit. At this moment we are following Piorry at the Salpêtrière, a very distant hospital, two or three miles from our lodgings; his patients are all old women, and not interesting. My object in following his course is to obtain some interesting information on the best mode of investigating the diseases of the chest. M. Piorry has devoted special attention to this subject. From Salpètrière we hurry to La Pitié; we hear a surgical lecture, reach home to breakfast, and then to the school of medicine. The lectures at the school, with a private course of anatomy during the hour of intermission, fill up the remainder of the day until four. Fortunately a private clinic at La Charité introduces me to a set of very interesting cases, especially on pectoral cases. Dr. Dagneau has a class who pay him ten francs a month, and enjoy the privilege of examining the patients much more conveniently than is practicable during the morning visit in the midst of a crowd of students. We dine at 5.30, and then lectures again until eight o'clock. Imagine the facilities, the delightful advantage of acquiring positive information, and what is at least as important, of learning the mode of obtaining these positive results. We see and hear the men who are so well known to us in America, learn to form

The delights of positive information and of learning the methods of acquiring these.

a correct estimate of their relative worth—in short, one of the most striking advantages of a medical visit to Europe is to acquire the sort of liberal professional feeling which is rarely secured by the continued intercourse with the same men, and the unpleasant medical politics which divide the profession in America.'[30]

♂

Relation of teacher to student.

A fraternal attitude is not easy to cultivate—the chasm between the chair and the bench is difficult to bridge. Two things have helped to put up a cantilever across the gulf. The successful teacher is no longer on a height, pumping knowledge at high pressure into passive receptacles. The new methods have changed all this. He is no longer *Sir Oracle*, perhaps unconsciously by his very manner antagonizing minds to whose level he cannot possibly descend, but he is a senior student anxious to help his juniors. When a simple, earnest spirit animates a college, there is no appreciable interval between the teacher and the taught—both are in the same class, the one a little more advanced than the other. So animated, the student feels that he has joined a family whose honour is his honour, whose welfare is his own, and whose interests should be his first consideration.[45]

♂

Teachers and teaching.

The phenomenal strides in every branch of scientific medicine have tended to overload it with detail. To winnow the wheat from the chaff and to prepare it in an easily digested shape for the tender stomachs of the first- and second-year students taxes the resources of the most capable teacher.[13]

The devotion to a subject, and the enthusiasm and energy which enable a man to keep abreast with its progress, are the very qualities which often lead him into pedagogic excesses. To reach a right judgement in these matters is not easy, and after all it may be said of teaching as Izaak Walton says of angling: 'Men are to be born so, I mean with inclinations to it.' [13]

Professors may be divided into four classes. There is, first, the man who can think, but who has neither tongue nor technique. Though useless for the ordinary student, he may be the leaven of a faculty and the chief glory of his University. A second variety is the phonographic professor, who can talk, but who can neither think nor work. Under the old régime he repeated year by year the same lecture. A third is the man who has technique, but who can neither talk nor think; and a fourth is the rare professor who can do all three, think, talk, and work. [13] **Four classes of teachers.**

For the crass therapeutic credulity, so widespread to-day, and upon which our manufacturing chemists wax fat, there is no more potent antidote than the healthy scepticism bred of long study in the post-mortem room. [16] **Scepticism, value of.**

Routine, killing routine, saps the vitality of many teachers who start with high aims, and who, for years, strive with all their energies against the degeneration which it is so prone to entail. In **Killing routine.**

the smaller schools isolation, the absence of congenial spirits working at the same subject, favours stagnation, and after a few years the fires of early enthusiasm no longer glow in the perfunctory lectures. In many teachers the ever-increasing demands of practice leave less and less time for study, and a first-class man may lose touch with his subject through no fault of his own, but through an entanglement in outside affairs which he cannot control, yet deeply regrets. To his five natural senses the student-teacher must add two more—the sense of responsibility and the sense of proportion. Most of us start with a highly developed sense of the importance of the work, and with a desire to live up to the responsibilities entrusted to us. Punctuality, the class first, always and at all times; the best that a man has in him, nothing less; the best the profession has on the subject, nothing less; fresh energies and enthusiasm in dealing with dry details; animated, unselfish devotion to all alike; tender consideration for his assistants—these are some of the fruits of a keen sense of responsibility in a good teacher. The sense of proportion is not so easy to acquire, and much depends on the training and on the natural disposition.[45]

Sense of responsibility and proportion.

The class always first.

The true greatness of a school.

The past is always with us, never to be escaped; it alone is enduring; but, amidst the changes and chances which succeed one another so rapidly in this life, we are apt to live too much for the present and too much in the future.[20]

The great possession of any University is its great names. It is not the 'pride, pomp, and circumstance' of an institution which bring honour; not its wealth, nor the number of its schools; not the students who throng its halls, but the men who have trodden in its service the thorny road through toil, even through hate, to the serene abode of Fame, climbing 'like stars to their appointed height.'[20]

But it is a secondary matter, after all, whether a school is under State or University control, whether the endowments are great or small, the equipments palatial or humble; the fate of an institution rests not on these; the inherent, vital element, which transcends all material interests, which may give to a school glory and renown in their absence, and lacking which, all the 'pride, pomp, and circumstance' are vain—this vitalizing element, I say, lies in the men who work in its halls, and in the ideals which they cherish and teach.[22]

Man the measure of the school.

There is no more potent antidote to the corroding influence of mammon than the presence in a community of a body of men devoted to science, living for investigation and caring nothing for the lust of the eyes and the pride of life.[22]

Value of scientific men.

We forget that the measure of the value of a nation to the world is neither the bushel nor the barrel, but *mind*; and that wheat and pork, though useful and necessary, are but dross in

comparison with those intellectual products which alone are imperishable. [22]

♁

Education, a life course.

The hardest conviction to get into the mind of a beginner is that the education upon which he is engaged is not a college course, not a medical course, but a life course, ending only with death, for which the work of a few years under teachers is but a preparation. Whether you will falter and fail in the race or whether you will be faithful to the end depends on the training before the start, and on your staying powers, points upon which I need not enlarge. You can all become good students, a few may become great students, and now and again one of you will be found who does easily and well what others cannot do at all, or very badly, which is John Ferriar's excellent definition of a genius. [45]

Student and genius.

♁

The art—world-wide.

The best that is known and taught in the world—nothing less can satisfy a teacher worthy of the name, and upon us of the medical faculties lies a bounden duty in this respect, since our art, co-ordinate with human suffering, is cosmopolitan. [22]

♁

The good teacher.

The aim of a school should be to have these departments in the charge of men who have, first, *enthusiasm*, that deep love of a subject, that desire to teach and extend it without which all instruction becomes cold and lifeless; secondly, *a full and personal knowledge of the branch taught*; not a second-hand information derived from books, but

the living experience derived from experimental and practical work in the best laboratories. [22]

Men are required who have a *sense of obligation*, that feeling which impels a teacher to be also a contributor, and to add to the stores from which he so freely draws. [22]

The investigator, to be successful, must start abreast of the knowledge of the day, and he differs from the teacher, who living in the present, expounds only what is current, in that his thoughts must be in the future, and his ways and work in advance of the day in which he lives. [22]

The same obligation rests on him to know and to teach the best that is known and taught in the world: on the surgeon, the obligation to know thoroughly the scientific principles on which his art is based, to be a master in the technique of his handicraft, ever studying, modifying, improving; on the physician, the obligation to study the natural history of diseases, and the means for their prevention, to know the true value of regimen, diet, and drugs in their treatment, ever testing, devising, thinking;—and upon both, to teach to their students habits of reliance, and to be to them examples of gentleness, forbearance, and courtesy in dealing with their suffering brethren. [22]

Thinkers.

There is a great need in the colleges of this country of men who are thinkers as well as workers—men

with ideas; men who have drunk deep of the astral wine, and whose energies are not sapped in the treadmill of the class-room.[21]

♂

Thinking—a University function.

The other function of a University is to think. Teaching current knowledge in all departments; teaching the steps by which the *status praesens* has been reached, and teaching how to teach, form the routine work of the various college faculties.[25]

♂

What I mean by the thinking function of a University, is that duty which the professional corps owes to enlarge the boundaries of human knowledge. Work of this sort makes a University great, and alone enables it to exercise a wide influence on the minds of men.[25]

♂

The very best instructor for students may have no conception of the higher lines of work in his branch, and contrariwise, how many brilliant investigators have been wretched teachers![25]

♂

In a school which wishes to do thinking as well as teaching, men must be selected who are not only thoroughly *au courant* with the best work in their department the world over, but who also have ideas, with ambition and energy to put them into force—men who can add, each one in his sphere, to the store of the world's knowledge. Men of this stamp alone confer greatness upon a University. They should be sought for far and wide; an institution which wraps itself in Strabo's cloak and does not

look beyond the college gates in selecting professors may get good teachers, but rarely good thinkers.[25]

Surrounded by a group of bright young minds, well trained in advanced methods, not only is the professor himself stimulated to do his best work, but he has to keep far afield and to know what is stirring in every part of his own domain.[25]

With a system of fellowships and research scholarships a University may have a body of able young men, who on the outposts of knowledge are exploring, surveying, defining, and correcting. Their work is the outward and visible sign that a University is thinking.[25]

Examinations.

Perfect happiness for student and teacher will come with the abolition of examinations, which are stumbling-blocks and rocks of offence in the pathway of the true student.[13]

Teaching the art.

How can we make the work of the student in the third and fourth year as practical as it is in his first and second? I take it for granted we all feel it should be. The answer is: take him from the lecture-room, and take him from the amphitheatre—put him in the out-patient department, put him in the wards. It is not the systematic lecture, not the amphitheatre clinic, nor even the ward-class—all of which have their value—in which the reformation is needed, but in the whole relationship of the senior student to the hospital. During the first two

years, he is thoroughly at home in the laboratories, domiciled, we may say, with his place in each one, to which he can go and work quietly under a tutor's direction and guidance. To parallel this condition in the third and fourth years certain reforms are necessary. First, in the conception of how the art of medicine and surgery can be taught. My firm conviction is that we should start the third-year student at once on his road of life. Ask any physician of twenty years' standing how he has become proficient in his art, and he will reply, by constant contact with disease; and he will add that the medicine that he learned in the schools was totally different from the medicine he learned at the bedside. The graduate of a quarter of a century ago went out with little practical knowledge, which increased only as his practice increased. In what may be called the natural method of teaching the student begins with the patient, using books and lectures as tools, as means to an end. The student starts, in fact, as a practitioner, as an observer of disordered machines, with the structure and orderly functions of which he is perfectly familiar. Teach him how to observe, give him plenty of facts to observe, and the lessons will come out of the facts themselves. For the junior student in medicine and surgery it is a safe rule to have no teaching without a patient for a text, and the best teaching is that taught by the patient himself. The whole art of medicine is in observation, as the old motto goes, but to educate the eye to see, the ear to hear, and the finger to feel takes time, and to make a

beginning, to start a man on the right path, is all that we can do. We expect too much of the student and we try to teach him too much. Give him good methods and a proper point of view, and all other things will be added as his experience grows.[27]

The second, and the most important reform, is in the hospital itself. In the interests of the medical student, of the profession, and of the public at large we must ask from the hospital authorities much greater facilities than at present enjoyed, at least by the students of a majority of the medical schools of this country (United States). The work of the third and fourth year should be taken out of the medical school entirely and transferred to the hospital, which, as Abernethy remarks, is the proper college for the medical student, in his last years at least.[27]

It is, I think, safe to say that in a hospital with students in the wards the patients are more carefully looked after, their diseases are more fully studied and fewer mistakes made. The larger question of the extended usefulness of the hospital in promoting the diffusion of medical and surgical knowledge, I cannot here consider.[27]

There is no scarcity of material; on the contrary, there is abundance. Think of the plethora of patients in this city (New York), the large majority of whom are never seen, not to say touched by a

medical student. Think of the hundreds of typhoid fever patients, the daily course of whose disease is never watched or studied by our pupils! Think of how few of the hundreds of cases of pneumonia which will enter the hospital during the next three months, will be seen daily, hourly, in the wards by the fourth-year men! And yet it is for this they are in the medical school, just as much as, more indeed than they are in it to learn the physiology of the liver or the anatomy of the hip-joint.[27]

Study of the medical art:

The great difficulty is in the third part of the education of the student, viz. his art. In the old days when a lad was apprenticed to a general practitioner, he had good opportunities to pick up the essentials of a rough and ready art, and the system produced many self-reliant, resourceful men. Then with the multiplication of the medical schools and increasing rivalry between them came the two years' course, which for half a century lay like a blight on the medical profession, retarding its progress, filling its ranks with half-educated men, and pandering directly to all sorts of quackery, humbuggery, and fraud. The awakening came about thirty years ago, and now there are few schools in this country without a four years' course, and all are trying to get clear of the old shackles and teach rational medicine in a rational way. But there are extraordinary difficulties in teaching the medical student his art. It is not hard, for example, to teach him all about the disease pneumonia, how it prevails in the winter and spring, how

some of the difficulties.

fatal it always has been, all about the germ, all about the change which the disease causes in the lungs and in the heart—he may become learned, deeply learned, on the subject—but put him beside a case, and he may not know which lung is involved, as he does not know how to find out, and if he did find out, he might be in doubt whether to put an ice-bag or a poultice on the affected side, whether to bleed or to give opium, whether to give a dose of medicine every hour or none at all, and he may not have the faintest notion whether the signs look ominous or favourable. So also with other aspects of the art of the general practitioner. A student may know all about the bones of the wrist – in fact he may carry a set in his pocket and know every facet and knob and nodule on them; he may have dissected a score of arms; and yet when he is called to see Mrs. Jones, who has fallen on the ice and broken her wrist, he may not know a Colles' from a Pott's fracture, and as for setting it *secundum artem*, he may not have the faintest notion, never having seen a case. Or he may be called to preside at one of those awful domestic tragedies—the sudden emergency, some terrible accident of birth or of childhood—that require skill, technical skill, courage—the courage of full knowledge; and if he has not been in the obstetrical wards, if he has not been trained practically, if he has not had the opportunities that are the rights of every medical student, he may fail at the critical moment; a life, two lives, may be lost, sacrificed to ignorance, often to helpless, involun-

In practice a theoretical training alone is inadequate.

Instruction in the art the greatest work of the Johns Hopkins Hospital.

tary ignorance. By far the greatest work of the Johns Hopkins Hospital has been the demonstration to the profession of the United States and to the public of this country of how medical students should be instructed in their art. I place it first because it was the most needed lesson, I place it first because it has done the most good as a stimulating example, and I place it first because never before in the history of this country have medical students lived and worked in a hospital as part of its machinery, as an essential part of the work of the wards. In saying this Heaven forbid that I should obliquely disparage the good and faithful work of my colleagues elsewhere. But the amphitheatre clinic, the ward and dispensary classes, are but bastard substitutes for a system which makes the medical student himself help in the work of the hospital as part of its human machinery. He does not see the pneumonia case in the amphitheatre from the benches, but he follows it day by day, hour by hour; he has his time arranged that he can follow it; he sees and studies similar cases, and the disease itself becomes his chief teacher, and he knows its phases and variations as depicted in the living; he learns under skilled direction when to act and when to refrain; he learns insensibly principles of practice, and he possibly escapes a nickel-in-the-slot attitude of mind, which has been the curse of the physician in the treatment of disease. And the same with the other branches of his art; he gets a first-hand knowledge, which, if he has any sense, may make

Nickel-in-the-slot attitude of mind.

him wise unto the salvation of his fellows. And all this has come about through the wise provision that the hospital was to be part of the medical school, and it has become for the senior students, as it should be, their college. Moreover, they are not in it upon sufferance and admitted through side-doors, but they are welcomed as important aids, without which the work could not be done efficiently. The whole question of the practical education of the medical student is one in which the public is vitally interested. Sane, intelligent physicians and surgeons with culture, science, and art, are worth much in a community, and they are worth paying for in rich endowments of our medical schools and hospitals. Personally there is nothing in my life in which I take greater pride than in my connexion with the organization of the medical clinic of the Johns Hopkins Hospital, and with the introduction of the old-fashioned methods of practical instruction. I desire no other epitaph than the statement that I taught medical students in the wards, as I regard this as by far the most useful and important work I have been called upon to do.[44]

Practical education.

The ward as a class-room.

There are hundreds of earnest students, thousands of patients, and scores of well-equipped young men willing and anxious to do practical teaching. Too often, as you know full well, 'the hungry sheep look up and are not fed'; for the bread of the wards they are given the stones of the lecture-room and the amphitheatre. The dissociation of student

and patient is a legacy of the pernicious system of theoretical teaching from which we have escaped in the first and second years.[27]

♁

Students in hospital (see 'Teaching the Art' also).

For the third- and fourth-year students, the hospital is the college; for the juniors, the out-patient department and the clinics; for the seniors, the wards. They should be in the hospital as part of its equipment, as an essential part, without which the work cannot be of the best. They should be in it as the place in which alone they can learn the elements of their art and the lesson which will be of service to them when in practice for themselves.[27]

♁

Experience.

Each case has its lesson—a lesson that may be, but is not always, learnt, for clinical wisdom is not the equivalent of experience. A man who may have seen 500 cases of pneumonia may not have the understanding of the disease which comes with an intelligent study of a score of cases, so different are knowledge and wisdom, which, as the poet truly says, 'far from being one, have oft-times no connexion.'[16]

♁

Judgement difficult.

Listen to the appropriate remark of the father of medicine, who twenty-five centuries ago had not only grasped the fundamental conception of our art as one based on observation, but had laboured also through a long life to give to the profession which he loved the saving health of science—listen, I say, to the words of his famous aphorism: 'Experience is fallacious and judgement difficult!'[16]

Uncertainties of medicine.

The problems of disease are more complicated and difficult than any others with which the trained mind has to grapple; the conditions in any given case may be unlike those in any other; each case, indeed, may have its own problem. Law, constantly looking back, has its forms and procedures, its precedents and practices. Once grasped, the certainties of divinity make its study a delight and a pastime; but who can tell of the uncertainties of medicine as an art? The science on which it is based is accurate and definite enough; the physics of a man's circulation are the physics of the waterworks of the town in which he lives, but once out of gear, you cannot apply the same rules for the repair of the one as of the other. [16]

Probability.

Variability is the law of life. As no two faces are the same, so no two bodies are alike, and no two individuals react alike and behave alike under the abnormal conditions which we know as disease. This is the fundamental difficulty in the education of the physician, and one which he may never grasp, or he takes it so tenderly that it hurts, instead of boldly accepting the axiom of Bishop Butler, more true of medicine than of any other profession: 'Probability is the guide of life.' Surrounded by people who demand certainty, and not philosopher enough to agree with Locke, that 'probability supplies the defect of our knowledge and guides us when that fails, and is always conversant about things of which we have no knowledge,' the practitioner too often gets into a habit of mind which

resents the thought that opinion, not full knowledge, must be his stay and prop. There is no discredit, though there is at times much discomfort, in this everlasting *perhaps* with which we have to preface so much connected with the practice of our art. It is, as I said, inherent in the subject."

Value of changes in a University teaching staff

"May not the loss of a professor bring stimulating benefits to a University? . . . It is strange of how slight value is the unit in a great system. A man may have built up a department and have gained a certain following, local or general, nay, more, he may have had a special value for his mental and moral qualities; and his fission may leave a scar, even an aching scar, but it is not for long. Those of us accustomed to the process know that the organism as a whole feels it about as much as a big polyzoon when a colony breaks off, or a hive of bees after a swarm—'tis not indeed always a calamity, oftentimes it is a relief."

The professor.

"Change is the very marrow of his existence—a new set of students every year, a new set of assistants, a new set of associations every few years to replace those called off to other fields;—in no active department there is no constancy, no stability in the human surroundings. And in this there is an element of sadness. A man comes into one's life for a few years, and you become attached to him, interested in his work and in his welfare, and perhaps you grow to love him as a son, and then, off he goes!—it must be as bad as having a daughter

married—leaving you with a bruised heart. After teaching for thirty years, and coming into very intimate contact with my assistants, my heart is all cicatrices, covered with one big 'milky patch.'[43]

♁

In-breeding in the University.

The question may be asked whether, as professors, we do not stay too long in one place. It passes my persimmon to tell how some good men—even lovable and righteous men in other respects—have the hardihood to stay in the same position for twenty-five years. To a man of active mind too long attachment to one college is apt to breed self-satisfaction, to narrow his outlook, to foster a local spirit, and to promote senility.[44]

♁

Collegiate chauvinism and dangers of in-breeding.

A common type of collegiate chauvinism is manifest in the narrow spirit too often displayed in filling appointments. The professoriate of the profession, the most mobile column of its great army, should be recruited with the most zealous regard to fitness, irrespective of local conditions that are apt to influence the selection. In-breeding is as hurtful to colleges as to cattle. The interchange of men, particularly of young men, is most stimulating, and the complete emancipation of the chairs which has taken place in most of our Universities should extend to the medical schools. Nothing, perhaps, has done more to place German medicine in the forefront to-day than a peripatetic professoriate, owing allegiance only to the profession at large, regardless of civic, sometimes, indeed, of national limitations and restrictions.

We acknowledge the principle in the case of the scientific chairs, and with increasing frequency act upon it, but an attempt to expand it to other chairs may be the signal for the display of rank parochialism.[23]

♂

The University spirit.

There remains now to foster that indefinite something which, for want of a better term, we call the University spirit, a something which a rich institution may not have, and with which a poor one may be saturated; a something which is associated with men and not with money, which cannot be purchased in the market or grown to order, but which comes insensibly with loyal devotion to duty and to high ideals, and without which *Nehushtan* is written on the portals of any school of medicine, however famous.[25]

BOOKS, LIBRARIES, AND MEDICAL SOCIETIES

'RELIGIO MEDICI'

To the writings of one old physician I can urge your closest attention. There have been, and, happily, there are still in our ranks notable illustrations of the intimate relations between medicine and literature, but in the group of literary physicians Sir Thomas Browne stands pre-eminent. The *Religio Medici*, one of the great English classics, should be in the hands—in the heart too—of every medical student. As I am on the confessional to-day, I may tell you that no book has had so enduring an influence on my life. I was introduced to it by my first teacher, Rev. W. A. Johnson, Warden and Founder of Trinity College School, and I can recall the delight with which I first read its quaint and charming pages. It was one of the strong influences which turned my thoughts towards medicine as a profession, and my most treasured copy—the second book I ever bought—has been a constant companion for thirty-one years, ***comes viae vitaeque.*** [13]

The value of the local library.

The organization of a library means effort, it means union, it means progress. It does good to men who start it, who help with money, with time and with the gifts of books. It does good to the young men, with whom our hopes rest, and a library gradually and insensibly moulds the profession of a town to a better and higher status. [3]

The Index Catalogue.

I need not refer in this audience to the use of the Index Catalogue in library work; it is also of incalculable value to any one interested in books. Let me give an everyday illustration. From the library of my friend, the late Dr. Rush Huidekoper, was sent to me a set of very choice old tomes, among which was a handsome folio of the works of du Laurens, a sixteenth-century physician. I had never heard of him, but was very much interested in some of his medical dissertations. In a few moments from the Index Catalogue the whole bibliography of the man was before me, the dates of his birth and death, the source of his bibliography, and where to look for his portrait. It is impossible to over-estimate the boon which this work is to book-lovers. [3]

The reaper often not the sower.

Too often the reaper is not the sower. Too often the fate of those who labour at some object for the public good is to see their work pass into other hands, and to have others get the credit for enterprises which they have initiated and made possible. [19]

It is hard for me to speak of the value of libraries in terms which would not seem exaggerated. Books have been my delight these thirty years, and from them I have received incalculable benefits. [19] **Books, value of.**

To study the phenomena of disease without books is to sail an uncharted sea, while to study books without patients is not to go to sea at all. [19]

Only a maker of books can appreciate the labours of others at their true value. Those of us who have brought forth fat volumes should offer hecatombs at the shrines of Minerva Medica. What exsuccous, attenuated offspring they would have been but for the pabulum furnished through the placental circulation of a library! How often can it be said of us with truth, *Das beste was er ist verdankt er Andern!* [19]

But when one considers the unending making of books, who does not sigh for the happy days of that thrice happy Sir William Browne, whose pocket library sufficed for his life's needs; drawing from a Greek testament his divinity, from the aphorisms of Hippocrates his medicine, and from an Elzevir Horace his good sense and vivacity? [19] **Sir William Browne's pocket library.**

There should be in connexion with every library a corps of instructors in the art of reading, who would, as a labour of love, teach the young how to read. [19] **Library instructors.**

Books.

It was a singularly judicious action on the part of the men who controlled this institution (in the thirties) to begin a collection of books. They knew the true gauge of a profession's standing, not the number of its schools, not the length of the roll of students, not the material wealth of the physicians; these are as dross and slag, chaff and dust, in estimating the true worth of a profession. Books are tools, doctors are craftsmen, and so truly as one can measure the development of any particular handicraft by the variety and complexity of its tools, so we have no better means of judging the intelligence of a profession than by its general collection of books. A physician who does not use books and journals, who does not need a library, who does not read one or two of the best weeklies and monthlies, soon sinks to the level of the cross-counter prescriber, and not alone in practice, but in those mercenary feelings and habits which characterize a trade.[10]

♂

The true worker does not want textbooks; he looks to journal literature and monographs, and the extraordinary development of all special departments makes the work of a library committee very difficult unless it has a rich appropriation.[10]

♂

Four sorts of readers.

An old writer says that there are four sorts of readers: 'Sponges, which attract all without distinguishing; Howre-glasses, which receive and powre out as fast; Bagges, which only retain the dregges of the spices and let the wine escape; and Sieves,

which retaine the best onely.' A man wastes a great many years before he reaches the 'sieve' stage.[19]

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The Medical Society.

No class of men needs friction so much as physicians; no class gets less. The daily round of a busy practitioner tends to develop an egoism of a most intense kind, to which there is no antidote. The few set-backs are forgotten, the mistakes are often buried, and ten years of successful work tend to make a man touchy, dogmatic, intolerant of correction, and abominably self-centred. To this mental attitude the Medical Society is the best corrective, and a man misses a good part of his education who does not get knocked about a bit by his colleagues in discussions and criticisms.[10]

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Books alone not enough.

The very marrow and fitness of books may not suffice to save a man from becoming a poor, mean-spirited devil, without a spark of fine professional feeling, and without a thought above the sordid issues of the day.[10]

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The safeguard against baneful individualism is the Medical Society.

The promotion and dissemination of medical knowledge throughout the State remains our important function. Physicians as a rule have less appreciation of the value of organization than the members of other professions. In large cities weakness results from the breaking into cliques and coteries, the interests of which take precedence over others of wider and more public character. Jealousies and misunderstandings are not unknown, and there is a baneful individualism—every man for himself—

a centrifugalizing influence against which the Society is and has been the only enduring protest. [15]

♀

The self-satisfied man.

The man who knows it all and gets nothing from the Society reminds one of that little dried-up miniature of humanity, the prematurely senile infant, whose tabetic marasmus has added old age to infancy. Why should he go to the Society and hear Dr. Jones on the gastric relations of neurasthenia when he can get it so much better out of the works of Einhorn or Ewald? He is weary of seeing appendices, and there are no new pelvic viscera for demonstration. It is a waste of time, he says, and he feels better at home, and perhaps that is the best place for a man who has reached this stage of intellectual stagnation. [16]

VALUE OF TRAVEL

TRAVEL

To walk the wards at Guy's or St. Bartholomew's, to see the work at the St. Louis or the Salpêtrière, to put in a few quiet months of study at one of the German university towns, will store the young man's mind with priceless treasures. I assume that he has a mind. I am not heedless of Shakespeare's sharp taunt:—

> 'How much the fool that hath been sent to Rome
> Exceeds the fool that hath been kept at home!'

Travel.

If he (the physician) cannot go abroad, let him spend part of his short vacations in seeing how it fares with the brethren in his own country. Even a New Yorker will learn something in the Massachusetts General and the Boston City Hospitals. A trip to Philadelphia would be most helpful; there is much to stimulate the mind at the old Pennsylvania Hospital and at the University, and he would be none the worse for a few weeks spent still further south on the banks of the Chesapeake. The all-important matter is to get breadth of view as early as possible, and this is difficult without travel.[6]

The future with the West.

Meanwhile, to students who wish to have the best that the world offers, let me suggest that the lines of intellectual progress are veering strongly to the West, and I predict that in the twentieth century the young English physicians will find their keenest inspiration in the land of the setting sun.[7]

Catholicity.

If the work is to be effective, the student must keep in touch with scholars in other countries. How often has it happened that years of precious time have been given to a problem already solved or shown to be insoluble, because of the ignorance of what had been done elsewhere! And it is not only book knowledge and journal knowledge, but a knowledge of men that is needed. The student will, if possible, see the men in other lands. Travel not only widens the vision and gives certainties in place of vague surmises, but the personal contact with

foreign workers enables him to appreciate better the failings or successes in his own line of work, perhaps to look with more charitable eyes on the work of some brother whose limitations and opportunities have been more restricted than his own.[45]

Infantilism in the teacher.

There are two appalling diseases which only a feline restlessness of mind and body may 'head off' in young men in the academic career. There is a remarkable bodily condition, known as infantilism, in which adolescence does not come at the appointed time, or is deferred until the twentieth year or later, and is then incomplete, so that the childish mind and the childish form and features remain. The mental counterpart is even more common among us. Intellectual infantilism is a well-recognized disease, and just as imperfect nutrition may cause failure of the marvellous changes which accompany puberty in the body, so the mind too long fed on the same diet in one place may be rendered rickety or even infantile.

Progeria in the teacher.

Worse than this may happen. A rare, but still more extraordinary, bodily state is that of progeria, in which, as though touched with the wand of some malign fairy, the child does not remain infantile, but skips adolescence, maturity, and manhood, and passes at once to senility, looking at eleven or twelve years like a miniature Tithonus 'marred and wasted,' wrinkled and stunted, a little old man among his toys. It takes great care on the part of any one to live a mental life corresponding to

the ages or phases through which his body passes. How few minds reach puberty, how few come to adolescence, how few attain maturity! It is really tragic—this widespread prevalence of mental infantilism, due to careless habits of intellectual feeding. Progeria is an awful malady in a college. Few faculties escape without an instance or two, and there are certain diets which cause it just as surely as there are waters in some of the Swiss valleys that produce cretinism. I have known an entire faculty attacked. The progeric himself is a nice enough fellow to look at and to play with, but he is sterile, with the mental horizon narrowed, and quite incapable of assimilating the new thoughts of his day and generation.

♂

As in the case of many other diseases, it is more readily prevented than cured, and, taken early, change of air and diet may do much to antagonize a tendency, inherited or acquired. Early stages may be relieved by a prolonged stay at the University Baths of Berlin or Leipzig, or if at the proper time a young man is transferred from an American or Anglican to a Gallic or Teutonic diet. Through no fault of the men, but of the system, due to the unfortunate idea on the part of the denominations that in each one of the States they should have their own educational institutions, collegiate infantilism is far too prevalent, against which the freer air and better diet of the fully equipped State Universities are proving a rapid, as they are the rational, antidote.[44]

I wish we could encourage on this continent (America) among our best students the habit of wandering. I do not know that we are quite prepared for it, as there is still great diversity in the curricula, even among the leading schools, but it is undoubtedly a great advantage to study under different teachers, as the mental horizon is widened and the sympathies enlarged. The practice would do much to lessen that narrow 'I am of Paul and I am of Apollos' spirit which is hostile to the best interests of the profession.[45]

The narrow spirit.

♁

It is more particularly upon the younger men that I would urge the advantages of an early devotion to a peripatetic philosophy of life. Just so soon as you have your second teeth think of a change; get away from the nurse, cut the apron-strings of your old teachers, seek new ties in a fresh environment, if possible, where you can have a certain measure of freedom and independence. Only do not wait for a fully-equipped billet almost as good as that of your master. A small one, poorly appointed, with many students and few opportunities for research, may be just what is needed to bring out the genius—latent and perhaps unrecognized—that will enable you in an unfavourable position to do well what another could not do at all, even in the most helpful surroundings.[44]

Advantages of the peripatetic life for the teacher.

♁

Nor would I limit this desire for change to the teachers. The student of the technical school

should begin his *Wanderjahre* early, not postponing them until he has taken his M.D. or Ph.D. A residence of four years in the one school is apt to breed prejudice and to promote mental astigmatism which the after years may never be able to correct.[44]

Travel and change.

Permanence of residence, good undoubtedly for the pocket, is not always best for wide mental vision in the physician.

You (army surgeons) are modern representatives of a professional age long past, of a day when physicians of distinction had no settled homes. You are Cyprid larvae, unattached, free-swimming, seeing much in many places; not fixed as we barnacles of civil life, head downward, degenerate descendants of the old professional Cirripeds, who laid under contribution not one but a score of cities.[26]

Morgan, Rush, Shippen, Bard, Wistar, Hossack, and others had received an education comprising all that was best in the period, and had added the acquired culture which can come only from travel and wide acquaintance with the world.[4]

Morgan, the founder of the medical school of the University of Pennsylvania, was away seven years, and before returning had taken his seat as a corresponding member of the French Academy of Surgery, besides having been elected a Fellow of the Royal Society.[4]

In a nomad life this common infirmity, to the entertainment of which the twin sisters, Use and Wont, lend their ever ready aid, will scarcely touch you (the army surgeon), and for this mercy give thanks; and while you must, as men, entertain many idols of the tribe, you may at least escape the idol of the cave. Enjoying the privilege of wide acquaintance with men of varied capabilities and training, you can, as spectators of their many crotchets and of their little weaknesses, avoid placing an undue estimate on your own individual powers and position.[26]

♁

Foreign travel.

If the licence to practise meant the completion of his education, how sad it would be for the young practitioner, how distressing to his patients! More clearly than any other the physician should illustrate the truth of Plato's saying, that education is a lifelong process. The training of the medical school gives a man his direction, points him the way, and furnishes him with a chart, fairly incomplete, for the voyage, but nothing more. Post-graduate study has always been a characteristic feature of our profession. These three hundred years the schools of Italy, Holland, France, Austria, and Germany have in turn furnished instruction to the young English practitioners who believed in the catholicity of medicine, and who felt the sharp sting of the remark which associates homely wits with home-keeping youths. At first it was the grand tour, and many of the masters spent years in foreign study. In spite of our journals and international

societies and increased facilities for travel, I am not sure that, among the teachers in our art the world over, medicine to-day is more cosmopolitan than it was in the seventeenth and eighteenth centuries. We now spend a few months or a year in foreign study, whereas our great-grandfathers thought nothing of two and three years. I have seen the manuscript journal of Dr. John Morgan (a Pennsylvania colonist), the founder of the first medical school in America (University of Pennsylvania), who after graduation at Edinburgh, spent three years on the continent, and became thoroughly familiar with Italian, Dutch, and French medicine, reaching such distinction as a student that he took his seat as a corresponding member of the Paris Academy of Surgery, and was elected a Fellow of the Royal Society.[2]

THE PRACTITIONER OF MEDICINE

The Student Practitioner
The General Practitioner
The Specialist
The Consultant

PHYSICIANS—TWO SORTS

There are only two sorts of doctors: those who practise with their brains, and those who practise with their tongues.[25]

THE TRUE PHYSICIAN

The studious hard-working man who wishes to know his profession thoroughly, who lives in the hospitals and dispensaries, and who strives to obtain a wide and philosophical conception of disease and its processes, often has a hard struggle, and it may take years of waiting before he becomes successful; but such form the bulwarks of our ranks, and outweigh scores of the voluble Cassios who talk themselves into, and often out of, practice.[25]

The waiting years.

Medicine is a most difficult art to acquire. All the college can do is to teach the student principles, based on facts in science, and give him good methods of work. These simply start him in the right direction; they do not make him a good practitioner—that is his own affair. To master the art requires sustained effort, like the bird's flight which depends upon the incessant action of the wings, but this sustained effort is so hard that many give up the struggle in despair. And yet it is only by persistent intelligent study of disease upon a methodical plan of examination that a man gradually learns to correlate his daily lessons with the facts of his previous experience and of that of his fellows, and so acquires clinical wisdom. Nowadays it is really not a hard matter for a well-trained man to keep abreast of the best work of the day. He need not be very scientific so long as he has a true appreciation of the dependence of his art on science, for, in a way, it is true that a good doctor may have practice and no theory, art and no science. To keep up a familiarity with the use of instruments of precision is an all-important help in his art, and I am profoundly convinced that as much space should be given to the clinical laboratory as to the dispensary. One great difficulty is that while waiting for the years to bring the inevitable yoke, a young fellow gets stale and loses that practised familiarity with technique which gives confidence. I wish the older practitioners would remember how important it is to encourage and utilize the young men who settle near them. In every large practice there are a dozen

or more cases requiring skilled aid in diagnosis, and this the general practitioner can have at hand. It is his duty to avail himself of it, and failing to do so he acts in a most illiberal and unjust way to himself and to the profession at large. Not only may the older man, if he has soft arteries in his grey cortex, pick up many points from the young fellow, but there is much clinical wisdom afloat in each parish which is now wasted or dies with the old doctor, because he and the young men have never been on friendly terms.[23]

♁

Three periods of the physician's life.

From the vantage-ground of more than forty years of hard work, Sir Andrew Clark told me that he had striven ten years for bread, ten years for bread and butter, and twenty years for cake and ale; and this is really a very good partition of the life of the student of internal medicine, of some at least, since all do not reach the last stage.[6]

♁

Time is money.

During this period (first ten years after graduation) let him (the young physician) not lose the substance of ultimate success in grasping at the shadow of present opportunity. Time is now his money, and he must not barter away too much of it in profitless work—profitless so far as his education is concerned, though it may mean ready cash.[6]

♁

The waiting years.

Five years, at least, of trial await the man after parting from his teachers, and entering upon an independent course—years upon which his future depends and from which his horoscope may be cast

with certainty. It is all the same whether he settles in a country village, or goes on with hospital and laboratory work; whether he takes a prolonged trip abroad; or whether he settles down in practice, with a father or a friend—these five waiting years fix his fate so far as the student life is concerned. Without any strong natural propensity to study, he may feel such a relief after graduation that the effort to take to books is beyond his mental strength, and a weekly journal with an occasional textbook furnish pabulum enough, at least, to keep his mind hibernating. But ten years later he is dead mentally, past any possible hope of galvanizing into life as a student, fit to do a routine practice, often a capable, resourceful man, but without any deep convictions, and probably more interested in stocks or in horses than in diagnosis or therapeutics. But this is not always the fate of the student who finishes his work on Commencement Day. There are men full of zeal in practice, who give good service to their fellow creatures, who have not the capacity or the energy to keep up with the times. While they have lost interest in science, they are loyal members of the profession, and appreciate their responsibilities as such. That fateful first lustrum ruins some of our most likely material. Nothing is more trying to the soldier than inaction, to mark time while the battle is raging all about him; and waiting for practice is a serious strain under which many yield. In the cities it is not so hard to keep up: there is work in the dispensaries and colleges, and the stimulus of the medical societies; but in smaller towns and

Dead mentally in ten years without study.

in the country it takes a strong man to live through the years of waiting without some deterioration.[45]

♁

Simply seeing not all.

It is a common error to think that the more a doctor sees the greater his experience and the more he knows. No one ever drew a more skilful distinction than Cowper in his oft-quoted lines, which I am never tired of repeating in a medical audience:—

'Knowledge and wisdom, far from being one,
Have oft-times no connexion. Knowledge dwells
In heads replete with thoughts of other men;
Wisdom in minds attentive to their own.
Knowledge is proud that he has learned so much;
Wisdom is humble that he knows no more.'[45]

♁

Sense and wisdom contrasted with knowledge.

What we call sense or wisdom is knowledge, ready for use, made effective, and bears the same relation to knowledge itself that bread does to wheat. The full knowledge of the parts of a steam engine and the theory of its action may be possessed by a man who could not be trusted to pull the lever to its throttle. It is only by collecting data and using them that you can get sense. One of the most delightful sayings of antiquity is the remark of Heraclitus about his predecessors—that they had much knowledge, but no sense.[45]

♁

Note-taking.

I wish I had time to speak of the value of note-taking. You can do nothing as a student in practice without it. Carry a small notebook which will fit into your waistcoat pocket, and never ask a new patient a question without notebook and pencil in hand. After the examination of a pneumonia case

two minutes will suffice to record the essentials in the daily progress. Routine and system, when once made a habit, facilitate work, and the busier you are the more time you will have to make observations after examining a patient. Jot a comment at the end of the notes: 'clear case,' 'case illustrating obscurity of symptoms,' 'error in diagnosis,' &c. The making of observations may become the exercise of a jackdaw-like trick, like the craze which so many of us have to collect articles of all sorts. The study of the cases, the relation they bear to each other and to the cases in literature—here comes in the difficulty. Begin early to make a threefold category — clear cases, doubtful cases, mistakes. And learn to play the game fair, no self-deception, no shrinking from the truth; mercy and consideration for the other man, but none for yourself, upon whom you have to keep an incessant watch. You remember Lincoln's famous *mot* about the impossibility of fooling all of the people all of the time. It does not hold good for the individual who can fool himself to his heart's content all of the time. If necessary, be cruel; use the knife and the cautery to cure the intumescence and moral necrosis which you will feel in the posterior parietal region, in Gall and Spurzheim's centre of self-esteem, where you will find a sore spot after you have made a mistake in diagnosis. It is only by getting your cases grouped in this way that you can make any real progress in your post-collegiate education; only in this way can you gain wisdom with experience.[45]

Routine and system.

Play the game fair.

The only way to make real progress.

Of the three well-stocked rooms which it should be the ambition of every young doctor to have in his house, the library, the laboratory, and the nursery—books, balances, and bairns—as he may not achieve all three, I would urge him to start at any rate with the books and the balances. A good weekly and a good monthly journal to begin with, and read them. Then, for a systematic course of study, supplement your college textbooks with the larger systems—Allbutt or Nothnagel—a system of surgery, and, as your practice increases, make a habit of buying a few special monographs every year. Read with two objects: first, to acquaint yourself with the current knowledge on a subject and the steps by which it has been reached; and secondly, and more important, read to understand and analyse your cases. To this line of work we should direct the attention of the student before he leaves the medical school, pointing in specific cases just where the best articles are to be found, sending him to the Index Catalogue—that marvellous storehouse, every page of which is interesting and the very titles instructive. Early learn to appreciate the differences between the descriptions of disease and the manifestations of that disease in an individual—the difference between the composite portrait and one of the component pictures. By exercise of a little judgement you can collect at moderate cost a good working library. Try, in the waiting years, to get a clear idea of the history of medicine. Read Foster's *Lectures on the History of Physiology*, Baas's *History of Medicine*. Get the

The desiderata of every young doctor.

The Index Catalogue.

The working library.

History of medicine.

'Masters of Medicine' Series, and subscribe to the *Library and Historical Journal.*

Have an avocation.

Every day do some reading or work apart from your profession. I fully realize, no one more so, how absorbing is the profession of medicine, how applicable to it is what Michelangelo says, 'There are sciences which demand the whole of a man, without leaving the least portion of his spirit free for other distractions'; but you will be a better man and not a worse practitioner for an avocation.[45]

♂

Value of autopsies.

In this dry-bread period he should see autopsies daily, if possible. Successful knowledge of the infinite variations of disease can only be obtained by a prolonged study of morbid anatomy. While of special value in training the physician in diagnosis, it also enables him to correct his mistakes, and, if he reads his lesson aright, it may serve to keep him humble.[6]

♂

Publication.

Too many 'quiz' classes or too much journal work has ruined many a promising clinical physician. While the Pythagorean silence of nearly seven years, which the great Louis followed (and broke to burst into a full-blown reputation), cannot be enjoined, the young physician should be careful what and how he writes. Let him take heed to his education, and his education will take care of itself, and in a development under the guidance of seniors he will find plenty of material for papers before medical societies and for publication in scientific journals.[6]

Curiously enough, the student-practitioner may find studiousness a stumbling-block in his career. A bookish man may never succeed; deep-versed in books, he may not be able to use his knowledge to practical effect; or, more likely, his failure is not because he has studied books much, but because he has not studied men more. He has never got over that shyness, that diffidence, against which I have warned you. I have known instances in which this malady has been incurable; in others I have known a cure effected not by the public, but by the man's professional brethren, who, appreciating his worth, have insisted upon utilizing his mental treasures.[45]

Studiousness may be a stumbling-block.

Study men.

♁

It is very hard to carry student habits into a large city practice; only zeal, a fiery passion, keeps the flame alive, smothered as it is so apt to be by the dust and ashes of the daily routine. A man may be a good student who reads only the book of nature. Such a one I remember in the early days of my residence in Montreal—a man whose devotion to patients and whose kindness and skill quickly brought him an enormous practice. Reading in his carriage and by lamplight at Lucina's bedside, he was able to keep well informed; but he had an insatiable desire to know the true inwardness of a disease, and it was in this way I came into contact with him. Hard pushed day and night, yet he was never too busy to spend a couple of hours with me searching for data which had not been forthcoming

The student in a large city; his difficulties, and how he may overcome them.

John Bell.

during life, or helping to unravel the mysteries of a new disease.[45]

♂

Quinquennial brain-dusting an essential.

The third essential for the practitioner as a student is the quinquennial brain-dusting, and this will often seem to him the hardest task to carry out. Every fifth year, back to the hospital, back to the laboratory, for renovation, rehabilitation, rejuvenation, reintegration, resuscitation, &c. Do not forget to take the notebooks with you, or the sheets, in three separate bundles, to work over. From the very start begin to save for the trip. Deny yourself all luxuries for it. . . . Hearken not to the voice of old 'Dr. Hayseed,' who tells you it will ruin your prospects, and that he 'never heard of such a thing' as a young man, not yet five years in practice, taking three months' holiday. To him it seems preposterous. Watch him wince when you say it is a speculation in the only gold mine in which the physician should invest—*Grey Cortex!* What about the wife and babies, if you have them? Leave them! Heavy as are your responsibilities to those nearest and dearest, they are outweighed by the heavier responsibilities to yourself, to the profession, and to the public. Like Isaphaena, the story of whose husband—ardent, earnest soul, peace to his ashes!—I have told in the little sketch of *An Alabama Student*, your wife will be glad to bear her share in the sacrifice you make.[45]

♂

The end of the second lustrum.

With good health and good habits the end of the second lustrum should find you thoroughly estab-

lished—all three rooms well furnished, a good stable, a good garden, no mining stock, but a life insurance, and, perhaps, a mortgage or two on neighbouring farms. Year by year you have dealt honestly with yourself; you have put faithfully the notes of each case into their proper places, and you will be gratified to find that, though the doubtful cases and mistakes still make a rather formidable pile, it has grown relatively smaller. You literally 'own' the country-side, as the expression is. All the serious and dubious cases come to you, and you have been so honest in the frank acknowledgement of your own mistakes, and so charitable in the contemplation of theirs, that neighbouring doctors, old and young, are glad to seek your advice. The work, which has been very heavy, is now lightened by a good assistant, one of your own students, who becomes in a year or so your partner.[45]

The highest ambition—the cultivated general practitioner.

. . . The cultivated general practitioner. May this be the destiny of a large majority of you! Have no higher ambition! You cannot reach any better position in a community; the family doctor is the man behind the gun, who does our effective work. That his life is hard and exacting; that he is underpaid and overworked; that he has but little time for study and less for recreation—these are the blows that may give finer temper to his steel, and bring out the nobler elements in his character.[45]

Specialism.

At the outset I would like to emphasize the fact that the student of internal medicine cannot be a

specialist. The manifestations of almost any one of the important diseases in the course of a few years will 'box the compass' of the specialities. [6]

The pluralist.

By all means, if possible, let him (the young physician) be a pluralist, and—as he values his future life—let him not get early entangled in the meshes of specialism. [6]

There are three lines of work which he (the young physician) may follow, all of the most intense interest, all of the greatest value to him—chemistry, physiology, and morbid anatomy. [6]

The specialist.

'That which has been is that which shall be.'

Medicine may be said to have begun with specialists. The Ebers papyrus is largely taken up with the consideration of local diseases, and centuries later we find in Greece certain individuals treating special ailments; and Aristophanes satirizes a 'rectum specialist' in a way not unlike our comic journals would 'poke fun' at an oculist or an aurist. The tail of our emblematic snake has returned into its mouth; at no age has specialism been so rife. [43]

Dangers of adopting a speciality too early.

A serious danger is the attempt to manufacture rapidly a highly complex structure from ill-seasoned material. The speedy success which often comes from the cultivation of a speciality is a strong incentive to young men to adopt early a particular line of work. How frequently are we consulted

by sucklings in our ranks as to the most likely branch in which to succeed, or a student, with the brazen assurance which only ignorance can give, announces that he intends to be a gynaecologist or an oculist. No more dangerous members of our profession exist than those born into it, so to speak, as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease, no amount of technical skill can hide from the keen eyes of colleagues defects which too often require the arts of the charlatan to screen from the public. [43]

Specialism.

The restriction of the energies of trained students to narrow fields in science, while not without its faults, has been the most important single factor in the remarkable expansion of our knowledge. Against the disadvantages in a loss of breadth and harmony there is the compensatory benefit of a greater accuracy in the application of knowledge in specialism, as is well illustrated in the cultivation of special branches of practice. [5]

Dentistry, ophthalmology, and gynaecology are branches which have been brought to a state of comparative perfection, and very largely by the labours of American physicians. [5]

Advantages of specialism.

The advantages to the profession which followed this differentiation have nowhere been more striking than in this country, and the earnest workers in ophthalmology, gynaecology, dermatology, and other

branches have contributed largely to inculcate the idea of thoroughness, the necessity for which is apt to be lost sight of in the hurry and bustle incident to the growth of a nation. Better work is done all along the line: a shallow diffuseness has given place to the clearness and definiteness which comes from accurate study in a limited field. The day has gone by for Admirable Crichtons, and although we have a few notable illustrations in our ranks of men who have become distinguished authorities in eye and skin diseases, and upon syphilis, without sacrificing their interests in general surgery, such are necessarily rare, and, unfortunately, from the very circumstances of the case, likely to become more uncommon. Then how comforting to the general practitioner is the wise counsel of the specialist. We take him a case that has puzzled and annoyed us, the diagnosis of which is uncertain, and we consult in vain the unwritten records of our experience and the printed records of our books. He labels it in a few minutes as a coleopterist would a beetle, and we feel grateful for the accuracy of his information, and happy in the possession of the label. And if sometimes (standing like Aaron between life and death) he illumines too brightly the darkness of our ignorance, are we not as often beholden to him for gentle dealing?[43]

♁

The public and specialism.

It is almost unnecessary to remark that the public, in which we live and move, has not been slow to recognize the advantage of a division of labour in the field of medicine. The desire for

expert knowledge is, however, now so general that there is a grave danger lest the family doctor should become, in some places, a relic of the past. It must, indeed, be a comfort to thousands to feel that in the serious emergencies of life expert skill is now so freely available.[43]

The gynaecologist.

Perhaps, as specialists, no class in our profession has been more roundly abused for meddlesome work than the gynaecologists, and yet what shall not be forgiven to the men who, as a direct outcome of the very operative details which have received the bitterest criticism, have learned to recognize tubal gestation, and are to-day saving lives which otherwise would inevitably have been lost? In one year at the Philadelphia Pathological Society, Formad has shown ten or twelve examples of ruptured tubal pregnancy obtained in medico-legal work (sudden deaths) in that city. The benefits which the public reap from specialism may be gathered from the fact that in a not much longer period of time I have seen seven specimens of tubal gestation, not removed by the pathologist, but by the gynaecologist, with the saving of five lives. The conservatism, which branded ovariotomists as butchers and belly-rippers, is not yet dead among us, and I say it frankly, to our shame, that it has not always been professional encouragement, which has supported the daring advances on special lines. Humanity owes a great debt of gratitude to the devoted men who have striven during the past half-century for exactness in knowledge, and for its

practical application in all departments, a debt too great to pay, too great, one sometimes feels, even to acknowledge.[43]

♁

The specialist; his dangers,

Next to the danger from small men is the serious risk of the loss of perspective in prolonged and concentrated effort in a narrow field. Against this there is but one safeguard—the cultivation of the sciences upon which the speciality is based.

and how he may avoid them.

The student-specialist may have a wide vision—no student wider—if he gets away from the mechanical side of the art, and keeps in touch with the physiology and pathology upon which his art depends. More than any of us, he needs the lessons of the laboratory, and wide contact with men in other departments may serve to correct the inevitable tendency to a narrow and perverted vision, in which the life of the ant-hill is mistaken for the world at large.[45]

♁

Dangers of specialism.

Specialism is not, however, without many disadvantages. A radical error at the outset is the failure to recognize that the results of specialized observation are at best only partial truths, which require to be correlated with facts obtained by wider study. The various organs, the diseases of which are subdivided for treatment, are not isolated, but complex parts of a complex whole, and every day's experience brings home the truth of the saying, 'When one member suffers all the members suffer with it.' Plato must have discussed this very question with his bright friends in the profession—

Eryximachus, perhaps—or he never could have put the following words in the mouth of Socrates:—

'I dare say that you may have heard eminent physicians say to a patient who comes to them with bad eyes, that they cannot cure the eyes by themselves, but that if his eyes are to be cured, his head must be treated: and then again they say that to think of curing the head alone and not the rest of the body also, is the height of folly. And arguing in this way they apply their methods to the whole body, and try to treat and heal the whole and the part together. Did you ever observe that this is what they say?'*

A sentence which embodies the law and the gospel for specialists.[43]

♁

The narrow and pedantic specialists.

In the cultivation of a speciality as an art there is a tendency to develop a narrow and pedantic spirit; and the man who, year in and year out, examines eyes, palpates ovaries, or tunnels urethrae, without regard to the wider influences upon which his art rests, is apt, insensibly perhaps, but none the less surely, to acquire the attitude of mind of the old Scotch shoemaker, who, in response to the Dominie's suggestions about the weightier matters of life, asked, 'D'ye ken leather?'[43]

♁

Advantages of study of physiology and pathology to the specialist.

Problems in physiology and pathology touch at every point the commonest affections; and exercised in these, if only in the early years of professional life, the man is chastened, so to speak, and can

* *Charmides*: Jowett's translation.

never, even in the daily round of the most exacting practice, degenerate into a money-making machine. And let the younger of my hearers lay this to heart: scan the lives of say twenty of the men most prominent in special lines of medicine and surgery to-day in this country, and you will find, with scarcely an exception, the early years devoted to anatomical, physiological, or pathological studies. They rose high because the foundations were deep. The most distinguished oculists have been men trained in physiology and pathology; and some, like Sir William Bowman, have had reputations so pre-eminent in several departments that the identity of the physiologist has been lost in the ophthalmologist.[43]

Education and the specialist.

Very little additional knowledge enables the general practitioner to grapple with a large proportion of the cases which in cities come under the care of the specialist. The question resolves itself into one of education. It is impossible in three sessions to bring men beyond the superficial routine, but in a more prolonged course—as I know from experience—the student can be taught practically, in the wards and dispensaries, enough of the technique of the specialist to give, at least, a foundation upon which to work. He should leave the schools knowing the practical application of the microscope, the ophthalmoscope, and the laryngoscope, and in these and other lines he should have proceeded to the stage in which he recognizes the limitations of his knowledge. Such a man, in

general practice, should know a 'choked disc'; the examination for tube-casts should be a familiar, everyday task; and he should be able to tell whether a vocal chord was paralysed. A serious obstacle to this happy consummation—which can be reached in a well-ordered system of education—is the absence, in the early years of practice, of material upon which to freshen the memory and to 'keep the hand in'; but the man who, as a student, has reached a certain point always retains some measure of the old facility. The post-graduate schools have done much to enable men to revive, and to acquire, technical skill, and have been of great service in generalizing special knowledge. In the practice of a good, all-round man, the number of cases demanding the help of a specialist is, after all, not great. The ordinary run of nervous disorders should be recognized; adenoid vegetations he would treat with the skill of a laryngologist; he would know enough not to tinker with a case of glaucoma; and though he might not diagnose a pus-tube from tubal gestation, he would (in this as in other details) have learned to know his limits and be ready to seek further advice.[43]

The specialist and societies.

The organization of societies for the study of particular diseases has been of late a very notable feature in the professional life of this country. Since the foundation of the Ophthalmological Society more than a dozen associations have been formed, and their union in a triennial congress has proved a remarkable success. These societies stimulate

work, promote good fellowship, and aid materially in maintaining the standard of professional scholarship. They are nearly all exclusive bodies, limited in membership, and demanding for admission evidence of special fitness. This point is sometimes urged against them; but the members exercise no arbitrary privilege in asking of candidates familiarity with the subject, and evidence of ability to contribute to the general store of knowledge. In some of the specialities these societies have been particularly useful in disciplining men who have traduced, not the code, but the unwritten traditions of our craft, acting as if they were venders of wares to be hawked in the market-place.[43]

♁

Diagnosis, not drugging.

In the fight which we have to wage incessantly against ignorance and quackery among the masses, and follies of all sorts among the classes, diagnosis, not drugging, is our chief weapon of offence. Lack of systematic personal training in the methods of the recognition of disease leads to the misapplication of remedies, to long courses of treatment when treatment is useless, and so directly to that lack of confidence in our methods which is apt to place us in the eyes of the public on a level with empirics and quacks.[23]

♁

New school of medicine.

The nineteenth century has witnessed a revolution in the treatment of disease, and a growth of a new school of medicine. The old schools—regular and homoeopathic—put their trust in drugs, to give which was the alpha and omega of their practice.

For every symptom there were a score or more of medicines—vile, nauseous compounds in one case; bland, harmless dilutions in the other. The characteristic of the new school is firm faith in a few good, well-tried drugs, little or none in the great mass of medicines still in general use.[5]

Imperative drugging—the ordering of medicine in any and every malady—is no longer regarded as the chief function of the doctor.[5]

The battle against polypharmacy, or the use of a large number of drugs (of the action of which we know little, yet we put them into bodies of the action of which we know less), has not been brought to a finish.[5]

One of the most striking characteristics of the modern treatment of disease is the return to what used to be called the natural methods—diet, exercise, bathing, and massage. There probably never has been a period in the history of the profession when the value of diet in the prevention and the cure of disease was more fully recognized.[5]

Facts.

All this change (from empiricism to science) has come about by the observation of facts, by their classification, and by the founding upon them of general laws.[22]

Emulating the persistence and care of Darwin, we must collect facts with open-minded watchful-

ness, unbiased by crotchets or notions; fact on fact, instance on instance, experiment on experiment; facts which fitly jointed together by some master who grasps the idea of their relationship, may establish a general principle. [22]

♁

The home laboratory.

A room fitted as a small laboratory, with the necessary chemicals and a microscope, will prove a better investment in the long run than a static machine or a new-fangled air-pressure spray apparatus. [16]

♁

Man's immutability,

The history of the race is a grim record of passions and ambitions, of weaknesses and vanities, a record, too often, of barbaric inhumanity; and even to-day, when philosophers would have us believe man's thoughts had widened, he is ready as of old to shut the gates of mercy, and to let loose the dogs of war. [14]

♁

and his mutability.

Our study is man, as the subject of accidents or diseases. Were he always, inside and outside, cast in the same mould, instead of differing from his fellow man as much in constitution and in his reaction to stimulus as in feature, we should ere this have reached some settled principles in our art. [22]

♁

And not only are the reactions themselves variable, but we, the doctors, are so fallible, ever beset with the common and fatal facility of reaching conclusions from superficial observations, and con-

stantly misled by the ease with which our minds fall into the rut of one or two experiences.[22]

♁

The clergy and physic.

I suppose, as a body, clergymen are better educated than any other, yet they are notorious supporters of all the nostrums and humbuggery with which the daily and religious papers abound; and I find that the further away they have wandered from the decrees of the Council of Trent, the more apt are they to be steeped in thaumaturgic and Galenical superstition.[25]

♁

Man—a medicine-taking animal.

But know also, man has an inborn craving for medicine. Heroic dosing for several generations has given his tissues a thirst for drugs. As I once before remarked, the desire to take medicine is one feature which distinguishes man, the animal, from his fellow creatures. It is really one of the most serious difficulties with which we have to contend. Even in minor ailments, which would yield to dieting or to simple home remedies, the doctor's visit is not thought to be complete without the prescription.[25]

♁

Pills and potions.

And now that the pharmacists have cloaked even the most nauseous remedies, the temptation is to use medicine on every occasion; and I fear that we may return to the state of polypharmacy, the emancipation from which has been the sole gift of Hahnemann and his followers to the race. As the public becomes more enlightened, and as we get more sense, dosing will be recognized as a very

minor function in the practice of medicine in comparison with the old measures of Asclepiades.[25]

♂

The practitioner's foes—the borderland pharmaceutical houses.

It may keep the practitioner out of the clutches of the arch-enemy of his professional independence—the pernicious literature of our camp-followers, a literature increasing in bulk, in meretricious attractiveness, and in impudent audacity. To modern pharmacy we owe much, and to pharmaceutical methods we shall owe much more in the future, but the profession has no more insidious foe than the large borderland pharmaceutical houses. No longer an honoured messmate, pharmacy in this form threatens to become a huge parasite, eating the vitals of the body medical. We all know too well the bastard literature which floods the mail, every page of which illustrates the truth of the axiom, the greater the ignorance the greater the dogmatism. Much of it is advertisements of nostrums foisted on the profession by men who trade on the innocent credulity of the regular physician, quite as much as any quack preys on the gullible public. Even the most respectable houses are not free from this sin of arrogance and of ignorant dogmatism in their literature. A still more dangerous enemy to the mental virility of the general practitioner is the 'drummer' of the drug-house. While many of them are good, sensible fellows, there are others, voluble as Cassio, impudent as Autolycus, and senseless as Caliban, who will tell you glibly of the virtues of the extract of the coccygeal gland in promoting pineal meta-

bolism, and ready to express the most emphatic opinions on questions about which the greatest masters of our art are doubtful. No class of men with which we have to deal illustrates more fully the greatest of ignorance, which is the conceit that a man knows what he does not know.[23]

Pseudo-science.

I am often asked—Why have you not tried the W—— treatment? As well ask why do I not use Bishop Berkeley's Tar-water. Any intelligent physician who reads Dr. W——'s articles in the journals, or as they have been collected in his book, must be impressed—first, with the crude, unscientific character of his work, and of the ignorance everywhere displayed of the nature of typhoid fever; and, secondly, with the persistent vaunting of a specific or cure-all. Dr. W—— is a devoted, earnest man, who honestly believes in his plan—so did Bishop Berkeley in his—but until the presentation has been made in a different way, I can no more accept his statements than those of any other misguided enthusiast who has been fortunate enough to have his wares exploited in the profession by a drug-house of repute. That any firm should have lent their name to this 'treatment,' that they should have spread broadcast in the profession its literature, may have been good business policy, but displays a sad lack of judgement. On such a question it is much easier to keep silence than to speak one's mind frankly in what may appear an ungracious, unkindly way; but I am quite ready to express this opinion in public, since I have had

so often to do it in private, in response to scores of letters from physicians in different parts of the country. To one who appreciates what those great masters, Nathan Smith, James Jackson, W. W. Gerhard, Elisha Bartlett, and Austin Flint, did in this country for the elucidation of typhoid fever, the book itself issued by Dr. W—— is a reflection on the memory of men whose works and ways are alike our standard and our pride. [29]

♁

The danger of the busy life.

Now, while nothing disturbs our mental placidity more sadly than straitened means, and the lack of those things after which the Gentiles seek, I would warn you against the trials of the day soon to come to some of you—the day of large and successful practice. . . . Engrossed late and soon in professional cares, getting and spending, you may so lay waste your powers that you may find, too late, with hearts given away, that there is no place in your habit-stricken souls for those gentler influences which make life worth living. [20]

♁

The busy doctor.

Greater sympathy must be felt for the man who has started all right and has worked hard at the societies, but as the rolling years have brought ever-increasing demands on his time, the evening hours find him worn out, yet not able to rest, much less to snatch a little diversion or instruction in the company of his fellows whom he loves so well. Of all men in the profession the forty-visit-a-day man is the most to be pitied. No always an automaton,

he may sometimes by economy of words and extraordinary energy do his work well, but too often he is the one above all others who needs the refreshment of mind and recreation that is to be had in a well-conducted society. Too often he is lost beyond all recall, and, like Ephraim joined to his idols, we may leave him alone. Many good men are ruined by success in practice, and need to pray the prayer of the Litany against the evils of prosperity. It is only too true, as you know well, that a most successful—as the term goes—doctor may practise with a clinical slovenliness that makes it impossible for that kind old friend, Dame Nature, to cover his mistakes. A well-conducted society may be of the greatest help in stimulating the practitioner to keep up habits of scientific study. It seems a shocking thing to say, but you all know it to be a fact, that many, very many, men in large practice never use a stethoscope, and as for a microscope, they have long forgotten what a leucocyte or a tube-cast looks like. This in some cases may be fortunate, as imperfect or half-knowledge may only lead to mistakes, but the secret of this neglect of means of incalculable help is the fact that he has not attained the full and enduring knowledge which should have been given to him in the medical school. It is astonishing with how little outside aid a large practice may be conducted, but it is not astonishing that in it cruel and unpardonable mistakes are made. At whose door so often lies the responsibility for death in cases of empyema but at that of the busy doctor,

who has not time to make routine examinations, or who is 'so driven' that the urine of his scarlet fever or puerperal patients is not examined until the storm has broken?[16]

♁

The general practitioner:

The peril is that should he (the physician) cease to think for himself he becomes a mere automaton, doing a penny-in-the-slot business which places him on a level with the chemist's clerk who can hand out specifics for every ill, from the 'pip' to the pox.[23]

♁

the best product of our profession.

With an optimistic temperament and a good digestion he is the very best product of our profession, and may do more to stop quackery and humbuggery, inside and outside of the ranks, than could a dozen prosecuting county attorneys. Nay more! such a doctor may be a daily benediction in the community—a strong, sensible, whole-souled man, living a life often of great self-denial, always of tender sympathy, worried neither by the vagaries of the well nor by the testy waywardness of the sick, and to him, if to any, may come (even when he knows it not) the true spiritual blessing—that 'blessing which maketh rich and addeth no sorrow.'

Dangers of prosperity.

The danger in such a man's life comes with prosperity. He is safe in the hard-working day, when he is climbing the hill, but once success is reached, with it come the temptations to which

Politics.

many succumb. Politics has been the ruin of many country doctors. . . . He is popular; he has a little

money; and he, if anybody, can save the seat for the party. When the committee leaves you, take the offer under consideration, and if in the ten or twelve years you have kept on intimate terms with those friends of your student days, Montaigne and Plutarch, you will know what answer to return. If you live in a large town, resist the temptation to open a sanatorium. It is not the work for a general practitioner, and there are risks that you may sacrifice your independence and much else besides. And, thirdly, resist the temptation to move into a larger place. In a good agricultural district, or in a small town, if you handle your resources aright, taking good care of your education, of your habits, and of your money, and devoting part of your energies to the support of the societies, &c., you may reach a position in the community of which any man may be proud. There are country practitioners among my friends with whom I would rather change places than with any in our ranks, men whose stability of character and devotion to duty make one proud of the profession. As I have said before, have no higher ambition than to become an all-round family doctor, whose business in life is to know disease and to know how to treat it.[45]

Opening a sanatorium.

Moving to a larger place.

Last year I was called to a town in Pennsylvania, and having to wait until late in the evening for the return train, I insisted, as is my wont, that the medical man should carry on his daily work and

The routinist.

allow me to help if possible. An afternoon round among people chiefly of the mechanic class, showed me a shrewd, cheery man, who in twenty years had gained the confidence and esteem of his patients. Kindly, hopeful words, very sensible advice about diet, and some half-dozen drugs seemed the essentials in his practice. In the evening I saw him dispose of a dozen patients at an outdoor dispensary rate; the examination was limited to the pulse, the tongue, and sometimes the throat. The dispensing, which was of the most primitive sort, was done at the table, on which stood four or five tins and paper boxes containing large quantities of calomel, soda, antipyrin, and Dover's powder. Other drugs, he said, were rarely necessary. He never used a stethoscope; he had no microscope or instruments of precision other than the thermometer. In reply to my questions he said that he rarely had to make an examination. 'If the patient has fever I send him to bed, if there is oedema I ask for the urine. Of course, I make many mistakes, and I sometimes get caught, but not oftener than the other fellows, and when I am in serious doubt I ask for a consultation.' This was a man of parts, a graduate from a good school, but early in his career he had become very busy, and gaining the confidence of the people, and having much confidence in himself, he had unconsciously got into a rut, out of which at forty only one thing could lift him—a prolonged course of additional study. This is by no means an exaggerated picture of a routinist in general practice. We all have our therapeutic ruts, and we all know consultants from

whom patients find it very difficult to escape without their favourite prescription, no matter what the malady may be. Men of this stamp gain a certain measure of experience, and if of a practical turn of mind may become experts in mechanical procedures, but to experience in the true sense of the word they never attain. In reality they suffer from the all-prevailing vice of intellectual idleness. It is so much easier to do a penny-in-the-slot sort of practice, in which each symptom is at once met with its appropriate drug, than to make a careful examination and really to study the case systematically. Much depends upon a man's mental constitution, but much more on the sort of training he has had. If, when a student, good methods are not acquired, it is very hard to get into proper habits of work in practice.[2]

The rationalist.

The rationalist, on the other hand, always approaches a patient as a mathematician does a problem. There is something to be found out; in each case, however trivial, there is something novel; and the problem of causation and the question of relief, while not perhaps of equal importance, are of equal interest. He may be just as busy as his careless brother, but he finds time to keep up a technical dexterity in the use of instruments of precision, and the stethoscope and the microscope are daily helps in diagnosis. These men are the delight of the consultant. To go into the country and find the diagnosis is made a case of mitral stenosis, a Friedrich's ataxia, a case of leukaemia, or one of

myxoedema gives a man a thrill of pleasure such as Comte says he always felt when a student gave him an intelligent set of answers in an examination. It is this class of practitioners for whom the post-graduate courses are helpful and necessary. They alone feel the need of keeping abreast of the times, and men of this type will return every few years, finding that a few months' course of study not only improves and helps them personally, but is most beneficial in their practice.[2]

♁

Routine.

In institutions the corroding effect of routine can be withstood only by maintaining high ideals of work; but these become the sounding brass and tinkling cymbals without corresponding sound practice.[15]

♁

Experience and the general practitioner.

For the general practitioner a well-used library is one of the few correctives of the premature senility which is so apt to overtake him. Self-centred, self-taught, he leads a solitary life, and unless his everyday experience is controlled by careful reading, or by the attrition of a medical society, it soon ceases to be of the slightest value, and becomes a mere accretion of isolated facts, without correlation.[19]

♁

The man who does not read.

It is astonishing with how little reading a doctor can practise medicine, but it is not astonishing how badly he may do it. Not three months ago a physician living within an hour's ride of the Surgeon-General's Library brought to me his little girl aged

twelve. The diagnosis of infantile myxoedema required only a half-glance. In placid contentment he had been practising twenty years in 'Sleepy Hollow,' and not even when his own flesh and blood was touched did he rouse from an apathy deep as Rip Van Winkle's sleep. In reply to questions: No, he had never seen anything in the journals about the thyroid gland; he had seen no pictures of cretinism or myxoedema; in fact, his mind was a blank on the whole subject. He had not been a reader, he said, but he was a practical man with very little time.[19]

The physician, like the Christian, has three great foes—*ignorance*, which is sin; *apathy*, which is the world; and *vice*, which is the devil. There is a delightful Arabian proverb, two lines of which run: 'He who knows not, and knows not that he knows not, is a fool. Shun him. He who knows not, and knows that he knows not, is simple. Teach him.' To a large extent these two classes represent the people with whom we have to deal. Teaching the simple and suffering the fools gladly, we must fight the *wilful* ignorance of the one and the *helpless* ignorance of the other, not with the sword of righteous indignation, but with the skilful weapon of the tongue. On this ignorance the charlatan and the quack live, and it is by no means an easy matter to decide how best to conduct a warfare against these wily foes, the oldest and most formidable with whom we have to deal. As the incomparable Fuller remarks, 'Well did the poets

Ignorance, apathy, and vice.

Ignorance.

feign Aesculapius and Circe brother and sister . . . for in all times (in the opinion of the multitude) witches, old women, and impostors have had a competition with doctors.' Education of the public of a much more systematic and active kind is needed.[41]

♁

Apathy our most dangerous foe.

By far the most dangerous foe we have to fight is *apathy*—indifference from whatever cause, not from a lack of knowledge, but from carelessness, from absorption in other pursuits, from a contempt bred of self-satisfaction. Fully twenty-five per cent. of the deaths in the community are due to this accursed apathy, fostering a human inefficiency, and going far to counterbalance the extraordinary achievements of the past century. Why should we take pride in the wonderful railway system with which enterprise and energy have traversed the land, when the supreme law, the public health, is neglected? What comfort in the thought of a people enjoying great material prosperity when we know that the primary elements of life (on which even the old Romans were our masters) are denied to them? What consolation does the 'little red school-house' afford when we know that a Lethean apathy allows toll to be taken of every class, from the little tots to the youths and maidens? Western civilization has been born of knowledge, of knowledge won by hard, honest sweat of body and brain, but in many of the most important relations of life we have failed to make that knowledge effective. And, strange irony of life, the lesson of human efficiency is being

taught us by one of the little nations of the earth, which has so far bettered our instruction that we must again turn eastward for wisdom. Perhaps in a few years our civilization may be put on trial, and it will not be without benefit if it arouses the individual from apathy and makes him conscious of the great truth that only by earnest individual human effort can knowledge be made effective, and if it arouses communities from an apathy which permits mediaeval conditions to prevail without a protest.[41]

Vice.

Against our third great foe—vice in all its forms—we have to wage an incessant warfare, which is not less vigorous because of the quiet, silent kind. Better than any one else the physician can say the word in season to the immoral, to the intemperate, to the uncharitable in word and deed. Personal impurity is the evil against which we can do most good, particularly to the young, by showing the possibility of the pure life and the dangers of immorality. Had I time, and were this the proper occasion, I would like to rouse the profession to a sense of its responsibility toward the social evil—the black plague which devastates the land. I can but call your attention to an important society, of which Dr. Prince Morrow of New York is the organizer, which has for one of its objects the education of the public on this important question. I would urge you to join in a crusade quite as important as that in which we are engaged against tuberculosis.[41]

To each one of you the practice of medicine will be very much as you make it—to one a worry, a care, a perpetual annoyance; to another, a daily joy and a life of as much happiness and usefulness as can well fall to the lot of man, because it is a life of self-sacrifice and of countless opportunities to comfort and help the weak-hearted, and to raise up those that fall. In the student spirit you can best fulfil the high mission of our noble calling—in his *humility*, conscious of weakness, while seeking strength; in his *confidence*, knowing the power while recognizing the limitations of his art; in his *pride* in the glorious heritage from which the greatest gifts to man have been derived; and in his sure and certain *hope* that the future holds for us still richer blessings than the past.[45]

Humility.

Confidence.

Just pride and hope.

♁

In no single relation of life does the general practitioner show a more illiberal spirit than in the treatment of himself. I do not refer so much to careless habits of living, to lack of routine, or to failure to pay due attention to the business side of the profession—sins which so easily beset him—but I would speak of his failure to realize, first, the need of a lifelong progressive personal training; and secondly, the danger lest in the stress of practice he sacrifice the most precious of all possessions, his mental independence.[23]

Mental independence.

♁

Self-satisfaction, a frame of mind widely diffused, is manifest often in greatest intensity where it should

Self-satisfaction.

be least encouraged, and in individuals and communities is sometimes so active on such slender grounds that the condition is comparable to the delusions of grandeur in the insane.[26]

There are men who have never had the preliminary education which would enable them to grasp the fundamentals of the science on which medicine is based. Others have had poor teachers, and have never received that bent of mind which is the all-important factor in education; others again fall early into the error of thinking that they know it all, and benefiting neither by their mistakes nor by their successes, miss the very essence of all experience, and die bigger fools, if possible, than when they started.[25] **Experience.**

Experience, in the true sense of the term, does not come to all with years, or with increasing opportunities. Growth in the acquisition of facts is not necessarily associated with development. Many grow through life as the crystal, by simple accretion, and at fifty possess, to vary the figure, the unicellular mental blastoderm with which they started.[26]

Chauvinism in the unit, in the general practitioner, is of much more interest and importance. It is amusing to read and hear of the passing of the family physician. There never was a time in our history in which he was so much in evidence, in which he was so prosperous, in which his prospects were so good or his power in the community so **Chauvinism in the practitioner.**

potent. The public has even begun to get sentimental over him. He still does the work; the consultants and the specialists do the talking and the writing, and take the fees. By the work, I mean the great mass of routine practice which brings the doctor into every household in the land and makes him, not alone the adviser, but the valued friend. He is the standard by which we are measured. What he is, we are; and the estimate of the profession in the eyes of the public is their estimate of him. A well-trained, sensible doctor is one of the most valuable assets of a community, worth to-day, as in Homer's time, many another man. To make him efficient is our highest ambition as teachers, to save him from evil should be our constant care as a guild.[23]

♁

The general practitioner.

The circumstances of life mould him (the family physician) into a masterful, self-confident, self-centred man, whose worst faults often partake of his best qualities.[23]

♁

The isolation of practice.

Few men live lives of more devoted self-sacrifice than the family physician, but he may become so completely absorbed in work that leisure is unknown; he has scarce time to eat or sleep, and, as Dr. Drummond remarks in one of his poems, 'He is the only man, I know me, don't get no holiday.' There is danger in this treadmill life lest he lose more than health and time and rest—his intellectual independence. More than most men he feels the tragedy of isolation—that inner isolation so well

expressed in Matthew Arnold's line, 'We mortal millions live alone.'[23]

Even in populous districts the practice of medicine is a lonely road which winds uphill all the way, and a man may easily go astray and never reach the Delectable Mountains unless he early finds those shepherd guides of whom Bunyan tells, Knowledge, Experience, Watchful, and Sincere.[23] **The lonely road.**

At times, and in degrees differing with our temperaments, there come upon us bouts of depression, when we feel that the battle has been lost, and that to fight longer is not worth the effort, periods when, amid the weariness, the fever, and the fret of daily practice, things have gone against us; we have been misunderstood by patients, our motives have been wrongly interpreted, and smitten perhaps in the house of our friends, the worries of heart, to which we doctors are so subject, make us feel bitterly the uncertainties of medicine as a profession, and at times make us despair of its future. In a voice that one may trust, Bartlett concludes his inquiry with these memorable words, which I quote, in the hope that they may soothe the heartache of any pessimistic brother:—

'There is no process which can reckon up the amount of good which the science and art of medicine have conferred upon the human race; there is no moral calculus that can grasp and comprehend the sum of their beneficent operations. **Words to soothe the heartache.**

Ever since the first dawn of civilization and learning, through

"The dark backward, and abysm of time,"

they have been the true and constant friends of the suffering sons and daughters of men. Through their ministers and disciples, they have cheered the desponding; they have lightened the load of human sorrow; they have dispelled or diminished the gloom of the sick-chamber; they have plucked from the pillow of pain its thorns, and made the hard couch soft with the poppies of delicious rest; they have let in the light of joy upon dark and desolate dwellings; they have rekindled the lamp of hope in the bosom of despair; they have called back the radiance of the lustreless eye and the bloom of the fading cheek; they have sent new vigour through the failing limbs; and, finally, when exhausted in all their other resources, and baffled in their skill—handmaids of philosophy and religion—they have blunted the arrows of death, and rendered less rugged and precipitous the inevitable pathway to the tomb. In the circle of human duties, I do not know of any, short of heroic and perilous daring, or religious martyrdom and self-sacrifice, higher and nobler than those of the physician. His daily round of labour is crowded with beneficence, and his nightly sleep is broken, that others may have better rest. His whole life is a blessed ministry of consolation and hope.'[42]

♁

Fate.

Alike in that you are men, and white, you are unlike in your features, very unlike in your minds and in your mental training, and your teachers will mourn the singular inequalities in your capacities. And so it is sad to think will be your careers; for

one success, for another failure; one will tread the primrose path to the great bonfire, another the straight and narrow way to renown; some of the best of you will be stricken early on the road, and will join that noble band of youthful martyrs who loved not their lives to the death; others, perhaps the most brilliant among you, like my old friend and comrade, Dick Zimmerman (how he would have rejoiced to see this day!), the fates will overtake and whirl to destruction just as success seems assured. When the iniquity of oblivion has blindly scattered her poppy over us, some of you will be the trusted counsellors of this community, and the heads of departments of this faculty; while for the large majority of you, let us hope, is reserved the happiest and most useful lot given to man—to become vigorous, whole-souled, intelligent, general practitioners.[24]

Success.

In a play of Oscar Wilde's one of the characters remarks, 'There are only two great tragedies in life, not getting what you want—and getting it!' and I have known consultants whose treadmill life illustrated the bitterness of this *mot*, and whose great success at sixty did not bring the success they had anticipated at forty. The mournful echo of the words of the preacher rings in their ears, words which I not long ago heard quoted with deep feeling by a distinguished physician: 'Better is an handful with quietness, than both the hands full with travail and vexation of spirit.'[6]

The consultant.

Poll the successful consulting physicians of this country to-day, and you will find that they have evolved either from general practice or from laboratory and clinical work; and many of the most prominent have risen from the ranks of general practitioners.[6]

This is, of course, a very full programme, but in ten years a bright man, with what Sydenham calls 'the ancient and serious diligence of Hippocrates,' will pick up a very fair education, and will be fit to pass from the dispensary to the wards.[6]

The consultant's second period.

Ten years' hard work tells with colleagues and friends in the profession, and with enlarged clinical faculties the physician enters upon the second, or bread-and-butter period. This, to most men, is the great trial, since the risks are greater, and many now drop out of the race, wearied at the length of the way, and drift into specialism or general practice.[6]

The physician develops more slowly than the surgeon, and success comes later. There are surgeons at forty years in full practice and at the very top of the wave, a time at which the physician is only preparing to reap the harvest of years of patient toil. The surgeon must have hands, and better, young hands.[6]

The consultant's

At the end of twenty years, when about forty-five, our Lydgate should have a first-class reputation in

the profession, and a large circle of friends and students. He will probably have precious little capital in the bank, but a very large accumulation of interest-bearing funds in his brain-pan. He has gathered a stock of special knowledge which his friends in the profession appreciate, and they begin to seek his counsel in doubtful cases, and gradually learn to lean upon him in times of trial. He may awake some day, perhaps quite suddenly, to find that twenty years of quiet work, done for the love of it, has a very solid value.[6]

brain is his capital.

In looking over my notes I find certain cases in which the visit has been of vital moment to the patient, usually in making a diagnosis, upon which successful treatment directly depended, as in myxoedema or pernicious anaemia. In a very much larger number there has been some important suggestion to make, either in prognosis or in the management of the case; while in others the chief value of the consultation has been in a reasonable talk with the patient about his condition, with assurance that there was nothing serious, and general advice as to mode of life and diet. Coleridge somewhere remarks that when a man is vaguely ill the talk of a doctor about the nature of his malady tones him down and consoles. It is very true, and to tone down and console are important functions of professional advisers.

The consultant and the consultation; his function.

There is a group of cases in which the physician seeks counsel on account of some special obscurity in the disease, an obscurity which may not be

lightened by the consultant after the most careful scrutiny. Not to receive the positive information they seek is often a great disappointment to both doctor and patient, but we must remember that there are—changing slightly Sir Thomas Browne's phraseology—cases indissoluble in physic, and a diagnosis is not possible in every instance. Frankly to confess ignorance is often wiser than to beat about the bush with a hypothetical diagnosis.

The unpleasant features.

A consultant's life is not without unpleasant features, chief among which is the passing of judgement on the unhappy incurables—on the cancerous, ataxics, and paralytics, who wander from one city to another. Few are able to receive the balm of truth, but now and again one meets with a cheery, brave fellow, who insists upon a plain, unvarnished statement of his prospects. Still more distressing are the instances of hopeless illness in which, usually for the friends' sake, the entire 'faculty' is summoned. Is there anything more doleful than the procession of four or five doctors into a sick man's room? Who does not appreciate Matthew Arnold's wish—

> 'Nor bring to see me cease to live
> Some doctor full of phrase and fame,
> To shake his sapient head, and give
> The ill he cannot cure a name'?

How often under such circumstances has the bitterness of the last line recurred to me! Oliver Wendell Holmes, in the *Memorial History of Boston*, speaking of two of the leading physicians of the early part of the century, says, 'I used often

to hear him (Dr. Danforth) spoken of as being called in "consultation," as the extreme unction of the healing art is called. If "old Dr. Danfurt" or "old Dr. Jeffers" were seen entering a sick man's door it was very likely to mean nothing more nor less than a *nunc dimittis*.' 'Tis not pleasant to think that *pallida mors* so often treads upon our heels.

There is nothing new under the sun, and the common practice of friends who, wishing to leave nothing undone, call in a batch of consultants is by no means modern. In the delightful lectures on *Latin Poetry*, delivered in 1893 at the Johns Hopkins University, Professor Tyrrell, of Dublin, quoted a long passage from the *Satyricon* of Petronius. The friends were discussing poor Chrysanthus, who had just 'slipped his wind.' Seleucus says, 'And it is not as if he hadn't tried the fasting cure. For five days neither bit nor sup passed his lips, and yet he's gone. Too many doctors did for him, or else it was to be. A doctor's really no use except to feel you did the right thing.' The last sentence might have come from George Eliot or George Meredith.

Note-taking and time required.

The value of careful note-taking is recognized by most consultants. I know, however, several men in large practice who have discarded it as altogether too onerous, and as taking up much more time than it is worth. The material which an active consultant may collect in a long life is enormous. The late Austin Flint's notes cover 16,922 folio pages, all written with his own hand. The late Palmer Howard

constantly lamented that the leisure never came in which he could work over the clinical records which he had so faithfully kept for so many years.

A case cannot be satisfactorily examined in less than half an hour, unless the notes have been taken previously by an assistant, a plan which consultants in very large practice might adopt more widely. A sick man likes to have plenty of time spent over him, and he gets no satisfaction in a hurried ten or twelve minutes' examination. If one never saw a patient the second time, notes might be superfluous, but can anything be more embarrassing in a return visit than to have forgotten name, face, malady, everything? At such a moment well-indexed notes are worth their weight in gold. Last year I had a notable illustration of the value of memoranda, however slight. Dr. Bray, of Chatham, brought a patient, whom from certain peculiarities I remembered at once, though nearly twelve years had elapsed since I had seen him. In 1883 he had, at Dr. Bray's suggestion, consulted me in Montreal. Fortunately I was able to lay my hands at once on the notes of the case. The point of interest in 1883 was whether the impotence was an early tabetic symptom, an opinion favoured by Dr. Jewell, of Chicago, and by a New York specialist whose name I do not remember. In the twelve years the patient's condition had remained unchanged, and many of the symptoms which he thought were of recent origin had been present at his first visit. Neither the patient nor Dr. Bray had any recollection of

a previous consultation with me, of the truth of which only my notes convinced them.

The histories may be taken very conveniently on the cards of the Boston Library Bureau, and filed away alphabetically. I have had much comfort since the adoption of this plan. It is a great saving of time and labour to dictate the condition of the patient to a secretary, who can (if the arrangement of the consulting-rooms is not convenient) be secluded behind a screen. She can afterwards add the notes to the card on which the history has been taken.

For several years I have adopted the plan of dictating at odd times abstracts of the histories of special cases and filing them in order ready for publication. In this way, when noting carefully during the session of 1892–3 all the cases of abdominal tumour which came before me for diagnosis, I had, in October, 1893, when I began the series of lectures which have been published, all the cases type-written and ready. It has always been a regret to me that I had not learned stenography, which Sir William Gowers has found so serviceable, and the use of which in medical work he has advocated so warmly.[47]

Value of stenography.

The environment of a large city is not essential to the growth of a good clinical physician. Even in small towns a man can, if he has it in him, become well versed in methods of work, and with the assistance of an occasional visit to some medical centre he can become an expert diagnostician and reach

The consultant in smaller towns.

a position of dignity and worth in the community in which he lives.[6]

♁

I wish to plead particularly for the wasted opportunities in the smaller hospitals of our large cities, and in those of more moderate size. There are in this State a score or more of hospitals with from thirty to fifty medical beds, offering splendid material for good men on which to build reputations.[6]

CUPID AND MARRIAGE

'A young man married is a man that 's marred.'

(Shakespeare.)

'Nought beneath the sky
More sweet, more worthy is than firm consent
Of man and wife in household government.'

(*Odyssey*, Chapman's translation.)

Marriage. So truly as a young man married is a young man marred is a woman unmarried, in a certain sense, a woman undone.[15]

♂

Hopeless passion. To the worries of uncertain health and greatly embarrassed affairs there were added, in the summer of 1810, the pangs, one can hardly say of disprized, but certainly of hopeless love. Writing to his friend Reynolds, March 3, 1818, in comparing life to a large mansion of many apartments, Keats says pathetically that he could only describe two; the first, the Infant or Thoughtless Chamber, in which we remain as long as we do not think; and the second, the Chamber of Maiden-Thought, in which we first become intoxicated with the light and atmosphere, until it gradually darkens and we see not well the exit and we feel the 'burden of the mystery.' For his friends he hopes the third Chamber of Life may be filled with the wine of love and the bread of friendship. Poor fellow! Within a year the younger Aphrodite, in the shape of Fanny Brawne, beckoned to him from the door of the third chamber. Through her came no peace to his soul, and the Muses' inspiration was displaced by a passion which rocked him as the 'winds rock the ravens on high'—by Plato's fourth variety of madness, which brought him sorrow and 'leaden-eyed Despair.'[18]

♂

Emotions on ice. How shall he (the young physician) live meanwhile? On crumbs—on pickings obtained from men in the cakes-and-ale stage (who always can

put paying work into the hands of the young men), and on fees from some classes, journal work, private instruction, and from work in the schools. Any sort of medical practice should be taken, but with caution—too much of it early may prove a good man's ruin. He cannot expect to do more than just eke out a living. He must put his emotions on ice; there must be no 'Amaryllis in the shade,' and he must beware the tangles of 'Neaera's hair.'[6]

♁

The two goddesses.

Another potent cause of worry is an idolatry by which many of you will be sore let and hindered. The mistress of your studies should be the heavenly Aphrodite, the motherless daughter of Uranus. Give her your whole heart, and she will be your protectress and friend. A jealous creature, brooking no second, if she finds you trifling and coquetting with her rival, the younger, earthly Aphrodite, daughter of Zeus and Dione, she will whistle you off and let you down the wind to be a prey, perhaps to the examiners, certainly to the worm Regret. In plainer language, put your affections in cold storage for a few years, and you will take them out ripened, perhaps a little mellow, but certainly less subject to those frequent changes which perplex so many young men. Only a grand passion, an all-absorbing devotion to the elder goddess, can save the man with a congenital tendency to philandering, the flighty Lydgate who sports with Celia and Dorothea, and upon whom the judgement ultimately falls in a basil-plant of a wife like Rosamond.[24]

WORK

THE MASTER-WORD

It seems a bounden duty on such an occasion to be honest and frank, so I propose to tell you the secret of life as I have seen the game played, and as I have tried to play it myself. You remember in one of the *Jungle Stories* that when Mowgli wished to be avenged on the villagers he could only get the help of Hathi and his sons by sending them the master-word. This I propose to give you in the hope, yes, in the full assurance, that some of you at least will lay hold upon it to your profit. Though a little one, the master-word looms large in meaning. It is the 'Open Sesame' to every portal, the great equalizer in the world, the true philosopher's stone which transmutes all the base metal of humanity into gold. The stupid man among you it will make bright, the bright man brilliant, and the brilliant student steady. With the magic word in your heart all things are possible, and without it all study is vanity and vexation. The miracles of life are with it; the blind see by touch, the deaf hear with eyes, the dumb speak with fingers. To the youth it brings hope, to the middle-aged confidence, to the aged repose. True balm of hurt minds, in its presence the heart of the sorrowful is lightened and consoled. It is directly responsible for all advances in medicine during the past twenty-five centuries. Laying hold upon it Hippocrates made observation and science the warp and woof of our art. Galen so read its meaning that fifteen centuries stopped thinking, and slept until awakened by the *De Fabrica* of Vesalius, which is the very incarnation of the master-word. With its inspiration Harvey gave an impulse to a larger circulation than he wot of, an impulse which we feel to-day. Hunter sounded all its heights and depths, and stands out in our history as one of the great exemplars of its virtue. With it Virchow smote the rock, and the waters of progress gushed out; while in the hands of Pasteur it proved a very talisman to open to us a new heaven in medicine and a new earth in surgery. Not only has it been the touchstone of progress, but it is the measure of success in everyday life. Not a man before you but is beholden to it for his position here, while he who addresses you has the honour directly in consequence of having had it graven on his heart when he was as you are to-day. And the master-word is WORK.[24]

A relish for work.

I was much interested the other day in reading a letter of John Locke to the Earl of Peterborough, who had consulted him about the education of his son. Locke insisted that the main point in education is to get 'a relish of knowledge. This is putting life into a pupil.' Get early this relish, this clear, keen enjoyance in work, with which languor disappears and all shadows of annoyance flee away.[13]

Haste.

Fevered haste is not encouraged in military circles, and if you can adapt your intellectual progress to army rules, making each step in your mental promotion the lawful successor of some other, you will acquire little by little those staying powers without which no man is of much value in the ranks.[26]

Ohne Hast, ohne Rast.

Success during the first ten years means endurance and perseverance; all things come to him who has learned to labour and to wait, who bides his time *ohne Hast, aber ohne Rast*, whose talent develops *in der Stille*, in the quiet fruitful years of unselfish work.[6]

Live for the day.

As to the method of work, I have a single bit of advice, which I give with the earnest conviction of its paramount influence in any success which may have attended my efforts in life—*Take no thought for the morrow.* Live neither in the past nor in the future, but let each day's work

absorb your entire energies, and satisfy your widest ambition. [13]

♁

The student who is worrying about his future, anxious over the examinations, doubting his fitness for the profession, is certain not to do so well as the man who cares for nothing but the matter in hand, and who knows not whither he is going. [13]

♁

The day's work.

Throw away, in the first place, all ambition beyond that of doing the day's work well. [26]

♁

The travellers on the road to success live in the present, heedless of taking thought for the morrow, having been able at some time, and in some form or other, to receive into their heart of hearts this maxim of the Sage of Chelsea: Your business is 'not to see what lies dimly at a distance, but to do what lies clearly at hand.' [26]

♁

Isolation.

Another aspect of the life of the army surgeon, isolation in some degree from professional colleagues, will influence you in different ways—hurtfully in the more dependent natures, helpfully in those who have learned that 'not from without us, only from within, comes, or can ever come, upon us light'—and to such the early years of separation from medical societies and gatherings will prove a useful seed-time for habits of study, and for the cultivation of the self-reliance that forms so important an element in the outfit of the practitioner. [26]

In the history of the profession there are grounds for the statement that isolation promoted originality. Some of the most brilliant work has been done by men in extremely limited spheres of action, and during the past hundred years it is surprising how many of the notable achievements have been made by physicians dwelling far from educational centres. Jenner worked out his discovery in a village; McDowell, Long, and Sims were country doctors; Koch was a district physician.[26]

♂

Industry essential at all ages.

He (Bassett) was very much impressed by the incessant industry of the French physicians. He says:—

'When I look at some of the medical men by whom I am surrounded, it makes me blush for shame; old men daily may be seen mixing their white locks with boys, and pursuing their profession with the ardour of youth. There is not a solitary great man in France that is idle, for if he were, that moment he would be outstripped; it is a race, and there are none so far ahead that they are not pressed by others; many are distanced, it is true, but there are none allowed to walk over the course. Witness Broussais, lecturing and labouring daily to sustain himself, after having elevated himself to the pinnacle; Lisfranc, an old bachelor with thousands, who after having made his daily visit and *leçon* for ten months for duty, during the vacation of two months he from choice gives a course of operations; and old Rollier may be seen daily supporting himself from bedpost to bedpost as jolly as if he were not far over sixty. Velpeau from a poor boy without money, time, education, or friends has by industry made himself one of the first surgeons in Europe.'[12]

A few words in addition about this dry-bread decade. He should stick closely to the dispensaries. A first-class reputation may be built up in them. Byrom Bramwell's *Atlas of Medicine* largely represents his work while an assistant physician to the Royal Infirmary, Edinburgh. Many of the best-known men in London serve ten, fifteen, or even twenty years in the out-patient departments before getting wards. Lauder Brunton only obtained his full physicianship at St. Bartholomew's after a service of more than twenty years in the out-patient department.[6]

Out-patient department; work in.

Faithfulness in the day of small things will insensibly widen your powers, correct your faculties; and, in moments of despondency, comfort may be derived from a knowledge that some of the best work of the profession has come from men whose clinical field was limited but well tilled.[26]

The small field.

The important thing is to make the lesson of each case tell on your education. The value of experience is not in seeing much, but in seeing wisely.[26]

How can you take the greatest possible advantage with the least possible strain? By cultivating system. I say cultivating advisedly, since some of you will find the acquisition of systematic habits very hard. There are minds congenitally systematic; others have a lifelong fight against an inherited tendency to diffuseness and carelessness

System.

in work. A few brilliant fellows have to dispense with it altogether, but they are a burden to their brethren and a sore trial to their intimates. I have heard it remarked that order is the badge of an ordinary mind. So it may be, but as practitioners of medicine we have to be thankful to get into that useful class. Let me entreat those of you who are here for the first time to lay to heart what I say on this matter. Forget all else, but take away this counsel of a man who has had to fight a hard battle, and not always a successful one, for the little order he has had in his life; take away with you a profound conviction of the value of system in your work. I appeal to the freshmen especially, because you to-day make a beginning, and your future career depends very much upon the habits you will form during this session. To follow the routine of the classes is easy enough, but to take routine into every part of your daily life is a hard task. Some of you will start out joyfully as did Christian and Hopeful, and for many days will journey safely towards the Delectable Mountains, dreaming of them, and not thinking of disaster until you find yourselves in the strong captivity of Doubt and under the grinding tyranny of Despair. You have been over-confident. Begin again more cautiously. No student escapes wholly from these perils and trials; be not disheartened, accept them. Let each hour of the day have its allotted duty, and cultivate that power of concentration which grows with its exercise, so that the attention neither flags nor wavers, but settles with a bull-dog tenacity on

the subject before you. Constant repetition makes a good habit fit easily in your mind, and by the end of the session you may have gained that most precious of knowledge—the power to work. Do not under-estimate the difficulty you will have in wringing from your reluctant selves the stern determination to exact the uttermost minute on your schedule. Do not get too interested in one study at the expense of another, but so map out your day that due allowance is given to each. Only in this way can the average student get the best that he can out of his capacities. And it is worth all the pains and trouble he can possibly take for the ultimate gain, if he can reach his doctorate with system so ingrained that it has become an integral part of his being. [24]

Ask of any active business man or a leader in a profession the secret which enables him to accomplish much work, and he will reply in one word, *system*; or as I shall term it, the *virtue of method*, the harness without which only the horses of genius travel. [22]

There are two aspects of this subject; the first relates to the orderly arrangement of your work, which is to some extent enforced by the roster of demonstrations and lectures, but this you will do well to supplement in private study by a schedule in which each hour finds its allotted duty. [22]

Thus faithfully followed day by day, system may become at last engrained in the most shiftless

nature, and at the end of a semester a youth of moderate ability may find himself far in advance of the student who works spasmodically, and trusts to *cramming.* [22]

♁

The incessant and irregular demands upon a busy doctor make it (system) very difficult to retain, but the public in this matter can be educated, and the men who practise with system, allotting a definite time of the day to certain work, accomplish much more and have at any rate a little leisure; while those who are unmethodical never catch up with the day's duties and worry themselves, their *confrères*, and their patients. [22]

♁

The secret of successful working lies in the systematic arrangement of what you have to do, and in the methodical performance of it. With all of you this is possible, for few disturbing elements exist in the student's life to interrupt the allotted duty which each hour of the day should possess. Make out, each one for himself, a time-table, with the hours of lecture, study, and recreation, and follow closely and conscientiously the programme there indicated. I know of no better way to accomplish a large amount of work, and it saves the mental worry and anxiety which will surely haunt you if your tasks are done in an irregular and desultory way. With too many, unfortunately, working habits are not cultivated until the constraining dread of an approaching examination is felt, when the hopeless attempt

is made to cram the work of two years into a six months' session with results only too evident to your examiners.[31]

With Laurence Sterne, we can afford to pity such, since they know not that the barrenness of which they complain is within themselves, a result of a lack of appreciation of the meaning and method of work.[26] **Routine; its value.**

Let nothing slip by you; the ordinary humdrum cases of the morning routine have been accurately described and pictured, but study each one separately as though it were new—so it is, so far as your special experience goes; and if the spirit of the student is in you the lesson will be there.[26]

Look at the cases not from the standpoint of textbooks and monographs, but as so many stepping-stones in the progress of your individual development in the art. This will save you from the pitiable mental attitude of the men who travel from Dan to Beer-sheba, and at every step cry out upon its desolation, its dreariness, and its monotony.[26]

Has work no dangers connected with it? What of this bogie of overwork of which we hear so much? There are dangers, but they may readily be avoided with a little care. I can only mention two, one physical, one mental. The very best students are often not the strongest. Ill-health, the **Dangers of work.**

bridle of Theages, as Plato called it in the case of one of his friends whose mind had thriven at the expense of his body, may have been the diverting influence towards books or the profession. Among the good men who have studied with me there stands out in my remembrance many a young Lycidas, 'dead ere his prime,' sacrificed to carelessness in habits of living and neglect of ordinary sanitary laws. Medical students are much exposed to infection of all sorts, to combat which the body must be kept in first-class condition. Grossteste, the great Bishop of Lincoln, remarked that there were three things necessary for temporal salvation —food, sleep, and a cheerful disposition. Add to these suitable exercise and you have the means by which good health may be maintained. Not that health is to be a matter of perpetual solicitation, but habits which favour the *corpus sanum* foster the *mens sana*, in which the joy of living and the joy of working are blended in one harmony. Let me read you a quotation from old Burton, the great authority on *morbi eruditorum*:—

'There are many reasons why students dote more often than others. The first is their negligence; other men look to their tools; a painter will wash his pencils; a smith will look to his hammer, anvil, forge; a husbandman will mend his plough-irons, and grind his hatchet if it be dull; a falconer or huntsman will have an especial care of his hawks, hounds, horses, dogs, &c.; a musician will string and unstring his lute, &c.; only scholars neglect that instrument, their brain and spirits (I mean), which they daily use.[24]

Much study is not only believed to be a weariness of the flesh, but also an active cause of ill-health of mind, in all grades and phases. I deny that work, legitimate work, has anything to do with this. It is that foul fiend Worry who is responsible for the majority of the cases. The more carefully one looks into the cause of the nervous breakdown in students, the less important is work *per se* as a factor. There are a few cases of genuine overwork, but they are not common. Of the causes of worry in the student life there are three of prime importance to which I may briefly refer. Worry.

An anticipatory attitude of mind, a perpetual forecasting, disturbs the even tenor of his way and leads to disaster. Years ago a sentence in one of Carlyle's essays made a lasting impression on me: 'Our duty is not to see what lies dimly at a distance, but to do what lies clearly at hand.' I have long maintained that the best motto for a student is, 'Take no thought for the morrow.' Let the day's work suffice; live for it, regardless of what the future has in store, believing that to-morrow should take thought for the things of itself. There is no such safeguard against the morbid apprehensions about the future, the dread of examinations and the doubt of ultimate success. Nor is there any risk that such an attitude may breed carelessness. On the contrary, the absorption in the duty of the hour is in itself the best guarantee of ultimate success. 'He that observeth the wind shall not sow; and he that regardeth the clouds shall not reap,' which means

that you cannot work profitably with your mind set upon the future.[24]

♁

Banish the future; live only for the hour and its allotted work. Think not of the amount to be accomplished, the difficulties to be overcome, or the end to be attained, but set earnestly at the little task at your elbow, letting that be sufficient for the day; for surely our plain duty is, 'Not to *see* what lies dimly at a distance, but to *do* what lies clearly at hand' (Carlyle).[31]

♁

Nemesis in the strenuous life.

In the worry and strain of modern life, arterial degeneration is not only very common, but occurs often at a relatively early age. For this the high pressure at which men live, and the habit of working the machine to its maximum capacity, are responsible, rather than excesses in eating and drinking, or than any special prevalence of syphilis. Angio-sclerosis, creeping on slowly but surely, 'with no pace perceived,' is the Nemesis through which Nature exacts retributive justice for the transgression of her laws—coming to one as an apoplexy, to another as an early Bright's disease, to a third as an aneurism, and to a fourth as angina pectoris; too often slitting 'the thin-spun life' in the fifth decade at the very time when success seems assured. Nowhere do we see such an element of tragic sadness as in many of these cases. A man who has early risen and late taken rest, who has eaten the bread of carefulness, striving for success in commercial, professional, or political life, after

twenty-five or thirty years of incessant toil reaches the point where he can say, perhaps with just satisfaction, 'Soul, thou hast much goods laid up for many years, take thine ease,' all-unconscious that the fell sergeant has already issued the warrant. How true to life is Hawthorne in *The House of the Seven Gables*! To Judge Pyncheon, who had experienced a mere dimness of sight and a throbbing at the heart—nothing more—and in whose grasp was the meed for which he had 'fought, and toiled, and climbed, and crept';—to him, as he sat in the old oaken chair of his grandfathers, thinking of the crowning success of his life, so near at hand, the avenger came through the arteries.[28]

Need of an avocation.

While medicine is to be your vocation or calling, see to it that you have also an avocation—some intellectual pastime which may serve to keep you in touch with the world of art, of science, or of letters. Begin at once the cultivation of some interest other than the purely professional. The difficulty is in a selection, and the choice will be different according to your tastes and training. No matter what it is, have an outside hobby. For the hard-working medical student it is easier perhaps to keep up an interest in literature. Let each subject in your year's work have a corresponding outside author. When tired of anatomy refresh your minds with Oliver Wendell Holmes; after a worrying subject in physiology, turn to the great idealists, to Shelley or to Keats, for consolation; when chemistry distresses your soul, seek peace in

the great pacifier, Shakespeare; ten minutes with Montaigne will lighten the burden.[13]

♁

The man, not the doctor.

But do not get too deeply absorbed to the exclusion of all outside interests. Success in life depends as much upon the man as upon the physician. Mix with your fellow students, mingle with their sports and their pleasures. You are to be members of a polite as well as of a liberal profession, and the more you see of life outside the narrow circle of your work the better equipped will you be for the struggle. I often wish that the citizens in our large educational centres would take a little more interest in the social life of the students, many of whom catch but few glimpses of home life during their course.[13]

♁

Idleness.

By nature man is the incarnation of idleness, which quality alone, amid the ruined remnants of Edenic characters, remains in all its primitive intensity.[22]

♁

The philosophy of life.

For better or worse, there are few occupations of a more satisfying character than the practice of medicine, if a man can but once get *orientirt* and bring to it the philosophy of honest work, the philosophy that insists that we are here, not to get all we can out of life about us, but to see how much we can add to it. The discontent and grumblings which one hears have their source in the man more often than in his environment.[16]

Occasionally a man of superlative merit is neglected, but it is because he lacks that most essential gift, the knowledge how to use his gifts. The failure in 99 per cent. of the cases is in the man himself; he has not started right, the poor chap has not had the choice of his parents, or his education has been faulty, or he has fallen away to the worship of strange gods, Baal or Ashtoreth, or worse still, Bacchus. But after all, the killing vice of the young doctor is laziness. He may have worked hard at college, but the years of probation have been his ruin. Without specific subjects upon which to work, he gets the newspaper or the novel habit, and fritters his energies upon useless literature. There is no greater test of a man's strength than to make him mark time in the 'stand and wait' years. Habits of systematic reading are rare, and are becoming more rare, and five or ten years from his licence, as practice begins to grow, may find the young doctor knowing less than he did when started, and without fixed educational purpose in life.[16] **Failure.**

MAN'S YEARS OF USEFULNESS AND HOW HE MAY PROLONG THEM

'Il y a beaucoup de vieillards à quarante ans et une infinité de jeunes à soixante.' (Laurens.)

Conservatism, not old fogeyism.

Conservatism and old fogeyism are totally different things; the motto of the one is, 'Prove all things, and hold fast that which is good,' and of the other, 'Prove nothing, but hold fast that which is old.' Do not suppose that you have here a monopoly of the article, which is a human, not a national, malady, for we see a very virulent type in America. In its illusiveness, and in the disastrous consequences which have often followed its hunting, old fogeyism is a sort of Snark in the medical profession. Before this Boojum, in the form of an entrenched variety, many good men and true have softly and silently vanished away like the 'beamish' nephew of the bellman, sacrificed to intellectual staleness in high places. One of the best correctives is the plan followed at Harvard, which asks every teacher to take the Sabbatical year, ensuring in this way rest of the mind, if not refreshment. To maintain mental freshness and plasticity requires incessant vigilance; too often, like the dial's hand, it steals from its figure with no pace perceived—except by one's friends, and they never refer to it. A deep and an enduring interest in the manifold problems of medicine, and a human interest in the affairs of our brotherhood; if these do not suffice nothing will.[2]

The fossilized teacher.

After all, no men among us need refreshment and renovating more frequently than those who occupy positions in our schools of learning. Upon none does intellectual staleness more readily steal 'with velvet step, unheeded, softly,' but none the less relentlessly. Dogmatic to a greater or less degree all successful

teaching must be, but year by year, unless watchful, this very dogmatism may react upon the teacher, who finds it so much easier to say to-day what he said last year. After a decade he may find it less trouble to draw on home supplies than to go into the open market for wares, perhaps not a whit better, but just a wee bit fresher. After twenty years the new, even when true, startles, too often repels; after thirty—well, he may be out of the race, still on the track perhaps, even running hard, but quite unconscious that the colts have long passed the winning-post. These unrefreshed, unregenerate teachers are often powerful instruments of harm, and time and again have spread the blight of blind conservatism in the profession. Safely enthroned in assured positions, men of strong and ardent convictions, with faithful friends and still more faithful students, they too often come within the scathing condemnation of the blind leaders of the blind, of those who would neither themselves enter into the possession of new knowledge nor suffer those who would to enter. The profession has suffered so sorely from this blight of old fogeyism that I may refer to the most glaring instance in our history. In the scientific annals of this great metropolis there is no occasion more memorable than April 16, 1616, when Harvey began his revolutionary teaching. Why the long, the more than Horatian delay, in publishing his great discovery? He knew his day and generation, and even after twelve years of demonstration, which should have disarmed all opposition, we know how

coldly the discovery was received, particularly in certain quarters. Harvey, indeed, is reported to have said that he did not think any above forty years of age had accepted the new truth. Many of us have lived through and taken part in two other great struggles. The din of battle over the germ theory of disease still rings in our ears. Koch's brilliant demonstration of the tuberculosis bacillus had a hard uphill fight to recognition. The vested interests of many minds were naturally against it, and it was only the watchers among us, men like Austin Flint, who were awake when the dawn appeared. It is notorious that the great principles of antiseptic surgery have grown slowly to acceptance, and nowhere more slowly than in the country in which they were announced, the country which has the great honour to claim Lord Lister as a citizen. Old fogeyism of the most malignant type stood in the way, and in some places, strange to stay, still stands. [2]

▽

La crise de quarante ans.

As Locke says: 'Truth scarce ever yet carried it by vote anywhere at its first appearance,' and these well-known examples illustrate a law in human knowledge that a truth has to grow to acceptance with the generation in which it is announced. Progress is an outcome of a never-ending struggle of the third and fourth decades against the fifth, sixth, and seventh. Men above forty are rarely pioneers, rarely the creators in science or in literature. The work of the world has been done by men who had not reached *la*

crise de quarante ans. And in our profession wipe out, with but few exceptions, the contributions of men above this age and we remain essentially as we are. Once across this line we teachers and consultants are in constant need of post-graduate study as an antidote against premature senility. Daily contact with the bright young minds of our associates and assistants, the mental friction of medical societies, and travel are important aids. Would you know the signs by which in man or institution you may recognize old fogeyism? There are three: first, a state of blissful happiness and contentment with things as they are; secondly, a supreme conviction that the condition of other people and other institutions is one of pitiable inferiority; and thirdly, a fear of change, which not alone perplexes but appals. [2]

♁

Three periods in the teacher's life.

The teacher's life should have three periods: study until twenty-five, investigation until forty, profession until sixty, at which age I would have him retired on a double allowance. [44]

♁

Presenility.

Insensibly, in the fifth and sixth decades, there begins to creep over most of us a change, noted physically among other ways in the silvering of the hair and the lessening of elasticity, which impels a man to open rather than to vault a five-barred gate. [22]

♁

Harvey complained in his day (1578–1657) that few men above this critical age (forty) seemed able

to accept the doctrine of the circulation of the blood, and in our own time it is interesting to note how the theory of the bacterial origin of certain diseases has had, as other truths, to grow to acceptance with the generation in which it was announced. The only safeguard in the teacher against this lamentable condition is to live in, and with, the third decade, in company with the younger, more receptive and progressive minds. [22]

♂

When a man nor wax nor honey can bring home, he should, in the interests of an institution, be dissolved from the hive to give more labourers room; though it is not every teacher who will echo the sentiment—

> 'Let me not live . . .
> After my flame lacks oil, to be the snuff
> Of younger spirits whose apprehensive senses
> All but new things disdain.'

As we travel farther from the East, our salvation lies in keeping our faces toward the rising sun, and in letting the fates drag us, like Cacus his oxen, backward into the cave of oblivion. [22]

♂

Walk with the young.

One thing may save him (from becoming useless in his advancing years). It was the wish of Walter Savage Landor always to walk with Epicurus on the right hand and Epictetus on the left; and I would urge the clinical physician, as he travels farther from the East, to look well to his companions—to see that they are not of his own age

and generation. He must walk with the 'boys,' else he is lost, irrevocably lost; not all at once, but by easy grades, and every one perceives his ruin before he, 'good, easy man,' is aware of it. I would not have him a basil plant, to feed on the brains of the bright young men who follow the great wheel uphill, but to keep his mind receptive, plastic, and impressionable he must travel with the men who are doing the work of the world, the men between the ages of twenty-five and forty. [6]

♁

The calm, contemplative life.

After years of hard work, at the very time when a man's energies begin to flag, and when he feels the need of more leisure, the conditions and surroundings that have made him what he is and that have moulded his character and abilities into something useful in the community—these very circumstances ensure an ever-increasing demand upon them; and when the call of the East comes, which in one form or another is heard by all of us, and which grows louder as we grow older, the call may come like the summons to Elijah, and not alone the ploughing of the day, but the work of a life, friends, relatives, even father and mother, are left, to take up new work in a new field. Or, happier far, if the call comes, as it did to Puran Das in Kipling's story, not to new labours, but to a life 'private, unactive, calm, contemplative.' [44]

RELIGION, DEATH, AND IMMORTALITY

'Life is a pure flame, and we live by an invisible sun within us.'

'There is nothing strictly immortal, but immortality. Whatever hath no beginning, may be confident of no end' (all others have a dependent being and are within the reach of destruction); 'which is the peculiar of that necessary Essence that cannot destroy itself; and the highest strain of omnipotency, to be so powerfully constituted as not to suffer even from the power of itself.' (Sir Thomas Browne, *Hydriotaphia—Urn Burial.*)

Science and faith.

And thirdly, every one of you will have to face the ordeal of every student in this generation who sooner or later tries to mix the waters of science with the oil of faith. You can have a good deal of both if you only keep them separate. The worry comes from the attempt at mixture. As general practitioners you will need all the faith you can carry, and while it may not always be of the conventional pattern, when expressed in your lives rather than on your lips, the variety is not a bad one from the standpoint of St. James; and may help to counteract the common scandal alluded to in the celebrated diary of that gossipy old pastor-doctor, the Rev. John Ward: 'One told the Bishop of Gloucester that he imagined physicians of all other men the most competent judges of affairs of religion, and his reason was because they were wholly unconcerned with it.'[24]

♂

The pathos of early death.

All lovers of poetry cherish Keats's memory for the splendour of the verse with which he has enriched our literature. There is also that deep pathos in a life cut off in the promise of such rich fruit. He is numbered among 'the inheritors of unfulfilled renown,' with Catullus and Marlowe, with Chatterton and Shelley, whom we mourn as doubly dead in that they died so young.[18]

♂

Sudden death.

'With what strife and pains we come into the world we know not, but it is commonly no easy matter to get out of it,' Sir Thomas Browne says; and, having regard to the uncertainties of the last

stage of all, the average man will be of Caesar's opinion, who, when questioned at his last dinner-party as to the most preferable mode of death, replied, 'That which is the most sudden.' Against this, one in a string of grievous calamities, we pray in the Litany, though De Quincey insists that the meaning here is 'unprepared.' In this sense sudden death is rare in angina pectoris, since the end comes but seldom in the first paroxysm. Terrible as are some of these incidental conditions accompanying coronary artery lesions, there is a sort of kindly compensation, as in no other local disease do we so often see the ideal death—death, like birth, 'a sleep and a forgetting.'[28]

Matthew Arnold's wish.

Angina Pectoris Vera, Heredity. The best-known instance is that of the Arnold family. William Arnold, collector of customs of Cowes, died suddenly of spasm of the heart in 1801. His son, the celebrated Thomas Arnold, of Rugby, . . . died in his first attack. Matthew Arnold, his distinguished son, was a victim of the disease for several years, and died suddenly in an attack on Sunday, April 15, 1888, having been spared, as he hopes in his little poem called *A Wish*,—

> 'the whispering, crowded room,
> The friends who come, and gape, and go;
> The ceremonious air of gloom—
> All, which makes death a hideous show!'[28]

The physician and the problem.

Than the physician, no one has a better opportunity to study the attitude of mind of his fellow

men on the problem. Others, perhaps, get nearer to John, taking no thought for the morrow, as he disports himself in the pride of life; but who gets so near to the real John as known to his Maker, to John in sickness and in sorrow, and sore perplexed as to the future? The physician's work lies on the confines of the shadow-land, and it might be expected that, if to any, to him would come glimpses that might make us less forlorn when in the bitterness of loss we cry:—

'Ah, Christ! that it were possible
For one short hour to see
The souls we loved, that they might tell us
What and where they be!'[32]

♁

'Clean forgotten, like the dead man out of mind.'

We habitually talk of the departed, not as though they had passed from death unto life and were in a state of conscious joy and felicity, or otherwise, but we count them out of our circle with set deliberation, and fix between them and us a gulf as deep as that which separated Dives from Lazarus. That sweet and gracious feeling of an ever-present immortality, so keenly appreciated in the religion of Numa, has no meaning for us. The dead are no longer immanent, and we have lost that sense of continuity which the Romans expressed so touchingly in their private festivals of the Ambarvalia, in which the dead were invoked and remembered. Even that golden cord of Catholic doctrine, the Communion of the Saints, so comforting to the faithful in all ages, is worn to a thread in our working-day world. Over our fathers immor-

Communion of Saints and the busy life.

tality brooded like the day; we have consciously thrust it out of lives so full and busy that we have no time to make an enduring covenant with our dead.[32]

As a rule, man dies as he had lived, uninfluenced practically by the thought of a future life. Bunyan could not understand the quiet, easy death of Mr. Badman, and took it as an incontestable sign of his damnation. The ideal death of Cornelius, so beautifully described by Erasmus, is rarely seen. In our modern life the educated man dies usually as did Mr. Denner in Margaret Deland's story—wondering, but uncertain, generally unconscious and unconcerned. I have careful records of about five hundred death-beds, studied particularly with reference to the modes of death and the sensations of the dying. The latter alone concern us here. Ninety suffered bodily pain and distress of one sort or another, eleven showed mental apprehension, two positive terror, one expressed spiritual exaltation, one bitter remorse. The great majority gave no sign one way or the other; like their birth, their death was 'a sleep and a forgetting.' The Preacher was right: in this matter man hath no pre-eminence over the beast—'as the one dieth, so dieth the other.'

How man dies.

The search of science for the spirits has been neither long nor earnest; nor is it a matter of surprise that it has not been undertaken earlier by men whose training had fitted them for the work.

Science and the spirits.

It is no clear, vasty deep, but a muddy, Acheronian pool in which our modern spirits dwell, with Circe as the presiding deity and the Witch of En-dor as her high priestess. Commingling with the solemn incantations of the devotees who throng the banks, one can hear the mocking laughter of Puck and of Ariel, as they play among the sedges and sing the monotonous refrain, 'What fools these mortals be!' Sadly besmirched, and more fitted for a sojourn in Ancyra than in Athens, has been the condition of those who have returned from the quest, and we cannot wonder that scientific men have hesitated to stir the pool and risk a touch from Circe's wand. All the more honour to those who have with honest effort striven to pierce the veil and explore the mysteries which lie behind it.[32]

♂

The immortality of the flesh.

Science has put on an immortality of the flesh, and in a remarkable triumph of research has learned to recognize in every living being at once immortal age beside immortal youth. The patiently worked-out story of the morphological continuity of the germ-plasm is one of the fairy tales of science. You who listen to me to-day feel organized units in a generation with clear-cut features of its own, a chosen section of the finely woven fringe of life built on the coral reef of past generations,—and, perhaps, if any, you citizens of no mean city have a right to feel of some importance. The revelations of modern embryology are a terrible blow to this pride of descent. The individual is nothing more than the transient offshoot of a germ-plasm,

which has an unbroken continuity from generation to generation, from age to age. This marvellous embryonic substance is eternally productive, eternally forming new individuals to grow up and to perish, while it remains in the progeny always youthful, always increasing, always the same. 'Thousands upon thousands of generations which have arisen in the course of ages were its products, but it lives on in the youngest generations with the power of giving origin to coming millions. The individual organism is transient, but its embryonic substance, which produces the mortal tissues, preserves itself, imperishable, everlasting, and constant.' [32]

Though his philosophy finds nothing to support it, at least from the standpoint of Terence the scientific student should be ready to acknowledge the value of a belief in a hereafter as an asset in human life. In the presence of so many mysteries which have been unveiled, in the presence of so many yet unsolved, he cannot be dogmatic and deny the possibility of a future state; and however distressing such a negative attitude of mind to the Teresian, like Pyrrho, he will ask to be left, reserving his judgement, but still inquiring. He will recognize that amid the turbid ebb and flow of human misery, a belief in the resurrection of the dead and the life of the world to come is the rock of safety to which many of the noblest of his fellows have clung; he will gratefully accept the incalculable comfort of such a belief to those sorrowing for precious friends

Value of a belief in immortality.

hid in death's dateless night; he will acknowledge with gratitude and reverence the service to humanity of the great souls who have departed this life in a sure and certain hope—but this is all. Whether across death's threshold we step from life to life, or whether we go whence we shall not return, even to the land of darkness, as darkness itself, he cannot tell.[32]

♁

Confessio fidei.

On the question before us wide and far your hearts will range from those early days when matins and evensong, evensong and matins, sang the larger hope of humanity into your young souls. In certain of you the changes and chances of the years ahead will reduce this to a vague sense of eternal continuity, with which, as Walter Pater says, none of us wholly part. In a very few it will be begotten again to the lively hope of the Teresians; while a majority will retain the sabbatical interest of the Laodicean, as little able to appreciate the fervid enthusiasm of the one as the cold philosophy of the other. Some of you will wander through all phases, to come at last, I trust, to the opinion of Cicero, who had rather be mistaken with Plato than be in the right with those who deny altogether the life after death; and this is my own *confessio fidei*.[32]

VARIA

Parting. Of course upon a few the sense of personal loss falls heavily; the faculty of getting attached to those with whom we work is strongly developed in most of us, and some will realize the bitterness of the lines:—

> 'Alas! that all we loved of him should be
> But for our grief as if it had not been.'[44]

Common sense. Common sense in matters medical is rare, and is usually in inverse ratio to the degree of education.[25]

The future. When schemes are laid in advance, it is surprising how often the circumstances fit in with them.[6]

Delilah of the press. In the life of every successful physician there comes the temptation to toy with the Delilah of the press, daily and otherwise. There are times when she may be courted with satisfaction, but beware! sooner or later she is sure to play the harlot, and has left many a man shorn of his strength, viz. the confidence of his professional brethren.[6]

Equanimity. One of the first essentials in securing a good-natured equanimity is not to expect too much of the people amongst whom you dwell.[20]

Two views in life. From two points alone have we a wide and satisfactory view of life—one, as amid the glorious tint of the early morn, ere the dew of youth has been brushed off, we stand at the foot of the hill, eager for the journey; the other, wider, perhaps

less satisfactory, as we gaze from the summit at the lengthening shadows cast by the setting sun.

You remember in the ascent of the Mountain of Purgatory, Dante, after a difficult climb, reached a high terrace encircling the hill, and sitting down turned to the east, remarking to his conductor, 'All men are delighted to look back.' So on this occasion, from the terrace of a quarter of a century, I am delighted to look back, and to be able to tell you of the prospect.[13]

The gospel of 'living' as against that of 'doing,' which Milton preached in the celebrated sonnet *On his Blindness*, found in Keats a warm advocate. 'Let us not, therefore,' he says, 'go hurrying about and collecting honey, bee-like buzzing here and there for a knowledge of what is not to be arrived at, but let us open our leaves like a flower, and be passive and receptive, budding patiently under the eye of Apollo, and taking truths from every noble insect that favours us with a visit.' Fatal to encourage in an active man of affairs, this dreamy state, this passive existence, favours in 'bards of passion and of mirth' the development of a fruitful mental attitude.[18] **The gospel of living.**

The dreamer spins from his 'own inwards his own airy citadel'; and as the spider needs but few points of leaves and twigs from which to begin his airy circuit, so Keats says, 'man should be content with as few points to tip with the fine web of his soul, and weave a tapestry empyrean, full of symbols **The dreamer.**

for his spiritual eye, of softness for his spiritual touch, of space for his wanderings, of distinctness for his luxury.' [18]

♁

Mind the measure of man.

Who has not known lives of the greatest freshness and nobility hampered at every turn and bound in chains the most commonplace and sordid, lives which illustrate the liberty and freedom enjoyed by minds innocent and quiet, in spite of stone walls and iron bars? On the other hand, scan the history of progress in the profession, and men the most liberal and narrow, reeking of the most pernicious type of chauvinism, have been among the teachers and practitioners in the large cities and great medical centres; so true is it, that the mind is its own place and in itself can make a man independent of his environment. [23]

♁

The credulous public.

'Knowledge comes, but wisdom lingers,' and in matters medical the ordinary citizen of to-day has not one whit more sense than the old Romans, whom Lucian scourged for a credulity which made them fall easy victims to the quacks of the time, such as the notorious Alexander, whose exploits make one wish that his advent had been delayed some eighteen centuries. [20]

♁

Curious, odd compounds are these fellow creatures, at whose mercy you will be; full of fads and eccentricities, of whims and fancies; but the more closely we study their little foibles of one sort and another in the inner life which we see, the more

surely is the conviction borne in upon us of the likeness of their weaknesses to our own. [20]

♁

Deal gently then with this deliciously credulous old human nature in which we work, and restrain your indignation, when you find your pet parson has triturates of the hundredth potentiality in his waistcoat pocket, or you discover accidentally a case of Warner's Safe-Cure in the bedroom of your best patient. It must needs be that offences of this kind come; expect them, and do not be vexed. [20]

♁

Hence the need of an infinite patience and of an over-tender charity towards these fellow creatures; have they not to exercise the same toward us? [20]

♁

Inexorable Nature:

Sometimes from our desolation only does a better life begin. Surely the blood penalty has been paid in full for the gross neglect of sanitary laws. The wantonness of the sacrifice is so terrible, so inhuman. Nature is inexorable, and red in tooth and claw with ravin, knows nothing of our humanitarian care of the individual. But her sacrifice is never wanton. Careful of the type, careless of the single life, sacrifice is a law of being, a condition of existence. In one of his delightful lectures on the *Foundations of Zoology*, Professor Brooks tells us that of the countless millions of the king of fish which yearly enter the Columbia River seeking the breeding-grounds, in the stern impulse of propagation, none return. 'The whole race is wiped out, utterly exterminated, as soon as it arrives at

cares for the species while the physician cares for the individual.

maturity and physical perfection in order that the perpetuation of the species may be assured.' Our ways, thank God, are not Nature's. Indulge as we may in speculations on the improvement of the race, in practice we care nothing for the species, only for the individual. Reversing Nature's method, we are careless of the type, careful only of the single life. Year by year unwilling witnesses of an appalling sacrifice, as fruitless as it is astounding, year by year we physicians sit at the bedsides of thousands upon thousands, chiefly of youths and maids, whose lives are offered up on the altars of Ignorance and Neglect. Walking always in its shadow, compassed always by its sorrows, we learn to look on death with mingled feelings. There is the death that comes with friendly care to the aged, to the chronic invalid, or to the sufferer with some incurable malady. Very different, indeed, is it with typhoid fever. A keen sense of personal defeat in a closely contested battle, the heart-searching dread lest something had been left undone, the pitifulness of the loss, so needless—and as a rule 'in the morn and liquid dew of youth'—the poignant grief of parents and friends worn out by the strain of anxious days and still more anxious nights—these make us feel a death from typhoid fever to be a Delian sacrifice.[39]

Lives offered on the altars of Ignorance and Neglect.

A Delian sacrifice.

♂

Limitations of the art.

We recognize to-day the limitations of the art; we know better the diseases curable by medicine, and those which yield to exercise and fresh air; we have learned to realize the intricacy of the

processes of disease, and have refused to deceive ourselves with half-knowledge, preferring to wait for the day instead of groping blindly in the dark or losing our way in the twilight. The list of diseases which we can positively cure is an ever-increasing one; the number of diseases the course of which we can modify favourably is a growing one; the number of incurable diseases (which is large, and which will probably always be large) is diminishing.[41]

Insanity.

One of the most remarkable and beneficial reforms of the nineteenth century has been in the attitude of the profession and the public to the subject of insanity, and the gradual formation of a body of men in the profession who labour to find out the cause and the means of relief of this most distressing of all human maladies. The reform movement inaugurated by Tuke in England, by Rush in the United States, by Pinel and Esquirol in France, and by Jacobi and Hasse in Germany, has spread to all civilized countries, and has led not only to the amelioration and improvement in the care of the insane, but to a scientific study of the subject which has already been productive of much good. In this country, while the treatment of the insane is careful and humanitarian, the unfortunate affiliation of insanity with politics is still in many States a serious hindrance to progress.[5]

Doctor and nurse—always with us.

There are individuals—doctors and nurses, for example—whose very existence is a constant reminder

of our frailties; and considering the notoriously irritating character of such people, I often wonder that the world deals so gently with them.

The presence of the parson suggests dim possibilities, not the grim realities conjured up by the names of the persons just mentioned; the lawyer never worries us in this way, and we can imagine in the future a social condition in which neither divinity nor law shall have a place, when all shall be friends and each one a priest, when the meek shall possess the earth; but we cannot picture a time when birth, and life, and death shall be separated from that 'grizzly troop' which we dread so much, and which is ever associated in our minds with 'physician and nurse.'[14]

♁

Intemperance.

And a third factor, most important of all, illustrates the old maxim, that more people are killed by over-eating and drinking than by the sword. Sensible people have begun to realize that alcoholic excesses lead inevitably to impaired health.[5]

♁

A man may take four or five drinks of whisky a day, or even more, and think perhaps he transacts his business better with that amount of stimulant; but it only too frequently happens that early in the fifth decade, just as business or political success is assured, Bacchus hands in heavy bills for payment, in the form of serious disease of the arteries or of the liver, or there is a general break-down.[5]

While temperance in the matter of alcoholic drinks is becoming characteristic of Americans, intemperance in the quantity of food taken is almost the rule. Adults eat far too much; the physicians are beginning to recognize that early degenerations, particularly of the arteries and of the kidneys, leading to Bright's disease, which were formally attributed to alcohol, are due in large part to too much food.[5]

Alcohol.

(1) Unanimity of opinion has not been reached on the question of alcohol as a food; the balance of evidence is in favour of the view that it does so act.

(2) A healthy man does not require alcoholic stimulants of any kind.

(3) So far as actual damage to the machine, a moderate quantity of beer or spirits, taken at luncheon or dinner, seems to have no special influence one way or another.

(4) The danger lies in excess, but this is not easy to define. A man who drinks between meals drinks too much. A man who takes three or four glasses of spirits daily is certainly drinking to excess. He may feel no ill effects at the time, but continued for years the practice may damage seriously his constitution. To get the necessary satisfaction he must inevitably increase the daily amount, and such a man is always confronted by the terrible danger of permanent enslavement.

Shakespeare gets to the root of the alcohol

question in his well-known statement—'Good wine is a good, familiar creature *if it be well used*.'[46]

Style in writing.

Naturally studious, fond of poetry, history, biography, and literature in general, and not for long tied and bound in the chains of general practice, Bartlett had ample opportunities to cultivate his mind. He says in one of his letters to Green (dated Pittsfield, Nov. 1, 1835):—'I pass a good deal of my time here quite alone, so that I find myself whiling away the hours in meditation much oftener than when engaged in the more varied and active affairs of business at home. I think that I always leave Pittsfield with the better and purer part of my being somewhat strengthened.' Burton concludes his immortal treatise with the advice, 'Be not solitary, be not idle,' but the true student, in some part of his life at least, should know the 'fruitful hours of still increase.' For many years Bartlett enjoyed a leisure known to-day to few professors of medicine, the fruits of which are manifest in his writings. Among his contemporaries in the profession there were brilliant writers—Samuel Henry Dickson, Jacob Bigelow, J. K. Mitchell—but in a style so uniformly high and polished, yet withal so plain, not one of them approached Bartlett. Compare, for example, Samuel Jackson's *Principles of Medicine*, written in 1832, with the first edition of the *Fevers* (1842)—the one pompous, involved, obscure; the other clear, direct, simple. For style in his medical

writings Bartlett may be called the Watson or the Trousseau of America.[42]

We have the very highest authority for the statement that 'the lunatic, the lover, and the poet, are of imagination all compact.' In a more comprehensive division, with a keener discernment, Plato recognizes a madness which is not an evil, but a divine gift, and the source of the chiefest blessings granted to men. Of this divine madness poetry occupies one of the fourfold partitions. Here is his definition:— **Poetry—a divine madness.**

'The third kind is the madness of those who are possessed by the Muses; which, taking hold of a delicate and virgin soul, and there inspiring frenzy, awakens lyrical and all other numbers; with these adorning the myriad actions of ancient heroes for the instruction of posterity. But he who, having no touch of the Muses' madness in his soul, comes to the door and thinks that he will get into the temple by the help of art—he, I say, and his poetry are not admitted; the sane man disappears and is nowhere when he enters into rivalry with the madman.'[18]

Here, in a few words, we have expressed the very pith and marrow of the nature of poetry, and a clearer distinction than is drawn by many modern writers of the relation of the art to the spirit, of the form to the thought. By the help of art, without the Muses' madness, no man enters the temple. The poet is a 'light and winged and holy thing,' **The poet's gift.**

whose inspiration, genius, faculty, whatever we may choose to call it, is allied to madness—he is possessed or inspired. Oliver Wendell Holmes has expressed this very charmingly in more modern terms, speaking of his own condition when composing the *Chambered Nautilus*: 'In writing the poem I was filled with a better feeling, the highest state of mental exaltation and the most crystalline clairvoyance that had ever been granted to me—I mean that lucid vision of one's thought and all forms of expression which will be at once precise and musical, which is the poet's special gift, however large or small in amount or value.' To the base mechanical of the working-day world, this lucid vision, this crystalline clairvoyance and mental exaltation is indeed a madness working in the brain, a state which he cannot understand, a Holy of Holies into which he cannot enter. [18]

♂

Verse-writing physicians.

It is remarkable how many physicians write poetry, or what passes as such. I have been told of a period in the history of the Royal College of Physicians of London when every elect (censor), as they were called, had written verses. Some begin young, as did Bartlett; others become attuned in the deep autumnal tone of advancing years, when, as Plato tells us in the *Phaedo*, even Socrates felt a divine impulsion to make verses before quitting the prison-house. Those of us who have read the epic of the late distinguished Professor George B. Wood, of the University of Pennsylvania, entitled,

First and Last, published when he was sixty-four, will devoutly hope that professors of medicine, when afflicted with this form of madness, will follow his example and publish their poems anonymously and in another country. Jacob Bigelow, too, when nearly seventy, 'darkened sanctities with song' with his American *Rejected Addresses.*[42] (*Eolopoesis.*)

♁

All the while Keats was 'budding patiently,' feeling his powers expand, and with the 'viewless winged Poesy' taking ever larger flights. An absorption in ideals, a yearning passion for the beautiful, was, he says, his master-passion. Matthew Arnold remarks it was with him 'an intellectual and spiritual passion.' It is 'connected and made one,' as Keats declares that in his case it was, 'with the ambition of the intellect.' 'It is,' as again he says, 'the mighty abstract idea of Beauty in all things.'[18]

His master-passion.

♁

Listen to one or two striking passages from his letters:—'This morning Poetry has conquered,—I have relapsed into those abstractions which are my only life.' 'I feel more and more every day, as my imagination strengthens, that I do not live in this world alone, but in a thousand worlds. No sooner am I alone than shapes of epic greatness are stationed around me, and serve my spirit the office which is equivalent to a king's body-guard. Then "Tragedy with scepter'd pall comes sweeping by."'

Beauty is truth.

'What the imagination seizes as beauty must be truth,' the expression in prose of his ever memorable lines:—

> 'Beauty is truth, truth beauty,—that is all
> Ye know on earth, and all ye need to know.' [18]

♁

The critic and the poet.

The truth is no event in Keats's life so warmly commends him to us, or shows more clearly the robustness of his mind, than his attitude in this much discussed episode (*Endymion*). In the first place, he had a clear, for so young a man an extraordinarily clear, perception of the limitation of his own powers and the value of his work. The preface to *Endymion*, one of the most remarkable ever written, contains his own lucid judgement. He felt that his foundations were 'too sandy,' that the poem was immature, feverish attempt, in which he has moved, as he says, from the leading-strings to the go-cart. Did any critic ever sketch with firmer hand the mental condition of a young man in transition?

> 'The imagination of a boy is healthy, and the mature imagination of a man is healthy; but the space of life between, in which the soul is in a ferment, the character undecided, the way of life uncertain, the ambition thick-sighted; thence proceeds mawkishness, and all the thousand bitters which those men I speak of must necessarily taste in going over the following pages.' [18]

A long shadowy group.

But as I speak, from out the memory of the past there rises before me a shadowy group, a long line

of students whom I have taught and loved, and who have died prematurely—mentally, morally, or bodily. To the successful we are all willing and anxious to bring the tribute of praise, but none so poor to give recognition to the failures. From one cause or another, perhaps because, when not absorbed in the present, my thoughts are chiefly in the past, I have cherished the memory of many young men whom I have loved and lost. *Io victis!* let us sometimes sing of the vanquished! Let us sometimes think of those who have fallen in the battle of life, who have striven and failed, who have failed even without the strife. How many have I lost from the student band by mental death, and from so many causes—some stillborn from college, others dead within the first year of infantile marasmus, while mental rickets, teething, tabes, and fits have carried off many of the most promising minds. From improper feeding within the first five fateful years scurvy and rickets head the mental mortality bills of students. To the teacher-nurse it is a sore disappointment to find at the end of ten years so few minds with the full stature, of which the early days gave promise. Still, so widespread is mental death that we scarcely comment upon it in our friends. The real tragedy is the moral death which, in different forms, overtakes so many good fellows, who fall away from the pure, honourable, and righteous service of Minerva into the idolatry of Bacchus, of Venus, or of Circe. Against the background of the past these tragedies stand out, lurid and dark, and as the names and faces

Those who have fallen in the battle of life.

The mental death.

The moral death.

of my old boys recur (some of them my special pride), I shudder to think of the blighted hopes and wrecked lives, and I force my memory back to those happy days when they were as you are now, joyous and free from care, and I think of them on the benches, in the laboratories, and in the wards—and there I leave them.[45]

♂

'Inheritors of unfulfilled renown.'

Less painful to dwell upon, though associated with a more poignant grief, is the fate of those whom physical death has snatched away in the bud or blossom of the student life. These are among the tender memories of the teacher's life, of which he does not often care to speak, feeling with Longfellow that the surest pledge of their remembrance is 'the silent homage of thoughts unspoken.' As I look back it seems now as if the best of us had died, that the brightest and the keenest had been taken, and the more commonplace among us had been spared. An old mother, a devoted sister, a loving brother, in some cases a broken-hearted wife, still pay the tribute of tears for the untimely ending of their high hopes, and in loving remembrance I would mingle mine with theirs. What a loss to our profession have been the deaths of such true disciples as Zimmerman, of Toronto; of Jack Cline and of R. L. MacDonnell, of Montreal; of Fred Packard and of Kirkbride, of Philadelphia; of Livingood, of Lazear, of Oppenheimer, and of Ochsner, in Baltimore—cut off with their leaves still in the green, to the inconsolable grief of their friends!

EXTRACTS FROM ARTICLES APPEARING SINCE 1904

I have made mistakes, but they have been mistakes of the head, not of the heart. I can truly say, and I take upon myself to witness, that in my sojourn among you:—

'I have loved no darkness,
Sophisticated no truth,
Nursed no delusions,
Allowed no fear.'[74]

'Just habit.'

I started life in the best of all environments—in a parsonage, one of nine children. A man who has filled Chairs in four universities, has written a successful book, and has been asked to lecture at Yale, is supposed popularly to have brains of a special quality. A few of my intimate friends really know the truth about me, as I know it. Mine, in good faith I say it, are of the most mediocre character. But what about those professorships, &c.? Just habit, a way of life, an outcome of the day's work, the vital importance of which I wish to impress upon you with all the force at my command. [48]

What lies at hand.

In the summer of 1871, I was attending the Montreal General Hospital. Much worried as to the future, partly about the final examination, partly as to what I should do afterwards, I picked up a volume of Carlyle, and on the page I opened there was the familiar sentence—'Our main business is not to see what lies dimly at a distance, but to do what lies clearly at hand.' A commonplace sentiment enough, but it hit and stuck and helped, and was the starting-point of a habit that has enabled me to utilize to the full the single talent entrusted to me. [48]

To-day.

The workers in Christ's vineyard were hired by the day; only for this day are we to ask for our daily bread, and we are expressly bidden to take no thought for the morrow. To the modern world

these commands have an Oriental savour, counsels of perfection akin to certain of the Beatitudes, stimuli to aspiration, not to action. I am prepared on the contrary to urge the literal acceptance of the advice, not in the mood of Ecclesiastes—'Go to now, ye that say to-day or to-morrow we will go into such a city, and continue there a year, and buy and sell and get gain; whereas ye know not what shall be on the morrow;' not in the Epicurean spirit of Omar with his 'jug of wine and Thou,' but in the modernist spirit, as a way of life, a habit, a strong enchantment, at once against the mysticism of the East and the pessimism that too easily besets us. Change that hard saying 'Sufficient unto the day is the evil thereof' into 'the goodness thereof,' since the chief worries of life arise from the foolish habit of looking before and after. As a patient with double vision from some transient unequal action of the muscles of the eye finds magical relief from well-adjusted glasses, so, returning to the clear binocular vision of to-day, the over-anxious student finds peace when he looks neither backward to the past nor forward to the future.[48]

♁

Day-tight compartments.

Now each one of you is a much more marvellous organization than the great liner, and bound on a longer voyage. What I urge is that you so learn to control the machinery as to live with 'day-tight compartments' as the most certain way to ensure safety on the voyage. Get on the bridge, and see that at least the great bulkheads are in working order. Touch a button and hear, at every level of

your life, the iron doors shutting out the Past—the dead yesterdays. Touch another and shut off, with a metal curtain, the Future—the unborn to-morrows. Then you are safe—safe for to-day. Read the old story in the *Chambered Nautilus*, so beautifully sung by Oliver Wendell Holmes, only change one line to 'Day after day beheld the silent toil.' Shut off the past. Let the dead past bury its dead. So easy to say, so hard to realize. The truth is, the past haunts us like a shadow. To disregard it is not easy. Those blue eyes of your grandmother, that weak chin of your grandfather, have mental and moral counterparts in your make-up. Generations of ancestors, brooding over 'Providence, Foreknowledge, Will, and Fate—Fixed fate, free will, foreknowledge absolute,' may have bred a New England conscience, morbidly sensitive, to heal which some of you had rather sing the 51st Psalm than follow Christ into the slums. Shut out the yesterdays, which have lighted fools the way to dusty death, and have no concern for you personally, that is, consciously. They are there all right, working daily in us, but so are our livers and our stomachs. And the past, in its unconscious action on our lives, should bother us as little as they do. The petty annoyances, the real and fancied slights, the trivial mistakes, the disappointments, the sins, the sorrows, even the joys—bury them deep in the oblivion of each night. Ah! but it is just then that to so many of us the ghosts of the past,

'Night-riding Incubi
Troubling the fantasy,'

come in troops, and pry open the eyelids, each one presenting a sin, a sorrow, a regret. Bad enough in the old and seasoned, in the young these demons of the past sins may be a terrible affliction, and in bitterness of heart many a one cries with Eugene Aram, 'Oh God! Could I so close my mind, and clasp it with a clasp.'[48]

♁

Undress your soul at night.

As a vaccine against all morbid poisons left in the system by the infections of yesterday, I offer 'a way of life.' 'Undress,' as George Herbert says, 'your soul at night,' not by self-examination, but by shedding, as you do your garments, the daily sins whether of omission or of commission, and you will wake a free man, with a new life. To look back, except on rare occasions for stock-taking, is to risk the fate of Lot's wife. Many a man is handicapped in his course by a cursed combination of retro- and intro-inspection, the mistakes of yesterday paralysing the efforts of to-day, the worries of the past hugged to his destruction, and the worm Regret allowed to canker the very heart of his life. To die daily, after the manner of St. Paul, ensures the resurrection of a new man, who makes each day the epitome of a life.[48]

♁

Have courage to persist.

Waste of energy, mental distress, nervous worries, dog the steps of a man who is anxious about the future. Shut close, then, the great fore and aft bulkheads, and prepare to cultivate the habit of a life of Day-Tight Compartments. Do not be

discouraged—like every other habit, the acquisition takes time, and the way is one you must find for yourselves. I can only give general directions and encouragement, in the hope that while the green years are on your heads, you may have the courage to persist.[48]

♂

What controls the day.

What are the morning sensations?—for they control the day. Some of us are congenitally unhappy during the early hours; but the young man who feels on awakening that life is a burden or a bore has been neglecting his machine, driving it too hard, stoking the engines too much, or not cleaning out the ashes and clinkers. Or he has been too much with the Lady Nicotine, or fooling with Bacchus, or, worst of all, with the younger Aphrodite—all 'messengers of strong prevailment in unhardened youth.' To have a sweet outlook on life you must have a clean body.[48]

♂

A clean machine of physical morality.

The morning outlook—which really makes the day—is largely a question of a clean machine—of physical morality in the wide sense of the term. 'C'est l'estomac qui fait les heureux,' as Voltaire says: no dyspeptic can have a sane outlook on life; and a man whose bodily functions are impaired has a lowered moral resistance. To keep the body fit is a help in keeping the mind pure, and the sensations of the first few hours of the day are the best test of its normal state. The clean tongue, the clear head, and the bright eye are birthrights of each day. Just as the late Professor Marsh would

diagnose an unknown animal from a single bone, so can the day be predicted from the first waking hour.[48]

♁

Biologic habits.

The start is everything, as you well know, and to make a good start you must feel fit. In the young, sensations of morning slackness come most often from lack of control of the two primal instincts—biologic habits—the one concerned with the preservation of the individual, the other with the continuance of the species.[48]

♁

Abstinence.

To drink, nowadays, but few students become addicted, but in every large body of men a few are to be found whose incapacity for the day results from the morning clogging of nocturnally-flushed tissues. As moderation is very hard to reach, and as it has been abundantly shown that the best of mental and physical work may be done without alcohol in any form, the safest rule for the young man is that which I am sure most of you follow—abstinence. A bitter enemy to the bright eye and the clear brain of the early morning is tobacco when smoked to excess, as it is now by a large majority of students. Watch it, test it, and if need be, control it. That befogged, woolly sensation reaching from the forehead to the occiput, that haziness of memory, that cold fish-like eye, that furred tongue, and last week's taste in the mouth—too many of you know them—I know them—they often come from too much tobacco. The other primal instinct is the heavy burden of the flesh

which Nature puts on all of us to ensure a continuation of the species. To drive Plato's team taxes the energies of the best of us. One of the horses is a raging, untamed devil, who can only be brought into subjection by hard fighting and severe training. This much you all know as men: once the bit is between his teeth the black steed Passion will take the white horse Reason with you and the chariot rattling over the rocks to perdition.[48]

♂

The day's work.

What is Life? you answer, I do not think—I act it; the only philosophy that brings you in contact with its real values and enables you to grasp its hidden meaning. Over the Slough of Despond, past Doubting Castle and Giant Despair, with this talisman you may reach the Delectable Mountains, and those Shepherds of the Mind—Knowledge, Experience, Watchful, and Sincere. Some of you may think this to be a miserable Epicurean doctrine—no better than that so sweetly sung by Horace:—

'Happy the man—and happy he alone,
He who can call to-day his own,
He who secure within can say,
To-morrow, do thy worst—for I have lived to-day.'

I do not care what you think, I am simply giving you a philosophy of life that I have found helpful in my work, useful in my play. Walt Whitman, whose physician I was for some years, never spoke to me much of his poems, though occasionally he would make a quotation; but I remember late one summer afternoon as we sat in the window of his little house in Camden there passed a group of

workmen whom he greeted in his usual friendly way. And then he said: 'Ah, the glory of the day's work, whether with hand or brain! I have tried

To exalt the present and the real,
To teach the average man the glory of his daily work or trade.'

In this way of life each one of you may learn to drive the straight furrow and so come to the true measure of a man. [48]

Prayer.

Begin the day with Christ and His prayer—you need no other. Creedless, with it you have religion; creed-stuffed, it will leaven any theological dough in which you stick. As the soul is dyed by the thoughts, let no day pass without contact with the best literature of the world. Learn to know your Bible, though not perhaps as your fathers did. In forming character and in shaping conduct, its touch has still its ancient power. [48]

Back to the Greeks.

Man's redemption of man is the great triumph of Greek thought. The tap-root of modern science sinks deep in Greek soil, the astounding fertility of which is one of the outstanding facts of history. As Sir Henry Maine says: 'To one small people . . . it was given to create the principle of progress. That people was the Greek. Except the blind forces of Nature nothing moves in this world which is not Greek in its origin.' Though not always recognized, the controlling principles of our art, literature and philosophy, as well as those

of science, are Hellenic. We still think on certain levels only with the help of Plato, and there is not a lecture room of this university (University of Edinburgh) in which the trained ear may not catch echoes of the Lyceum. In the introductory chapter of his *Rise of the Greek Epic*, Professor Murray dwells on the keen desire of the Greeks to make life a better thing than it is, and to help in the service of man, a thought that pervades Greek life like an aroma. From Homer to Lucian there is one refrain—the pride in the body as a whole; and in the strong conviction that 'our soul in its rose-mesh' is quite as much helped by flesh as flesh is by soul, the Greek sang his song, 'For pleasant is this flesh.' The beautiful soul harmonizing with a beautiful body is as much the glorious ideal of Plato as it is the end of the education of Aristotle.[49]

♁

Present life.

The glory of this zeal for the enrichment of the present life was revealed to the Greeks as to no other people, but in respect to care for the body of the common man, we have only seen its fulfilment in our own day, but as a direct result of methods of research initiated by them.[49]

♁

Steps in philosophy.

Philosophy, as Plato tells us, begins with wonder; and, staring open-eyed at the starry heavens on the plains of Mesopotamia, man took a first step in the careful observation of Nature, which carried him a long way in his career. But he was very slow to learn the second step—how to interrogate Nature,

to search out her secrets, as Harvey puts it, by way of experiment.[49]

♁

Anaesthesia.

At a stroke the curse of Eve was removed, that multiplied sorrow of sorrows, representing in all ages the very apotheosis of pain. The knife has been robbed of its terrors, and the hospitals are no longer the scenes of those appalling tragedies that made the stoutest quail. To-day we take for granted the silence of the operating-room, but to reach this Elysium we had to travel the slow road of laborious research, which gave us first the chemical agents; and then brave hearts had to risk reputation, and even life itself in experiments, the issue of which was for long doubtful.[49]

♁

Vaccination: a challenge.

A great deal of literature has been distributed, casting discredit upon the value of vaccination in the prevention of smallpox. I do not see how any one who has gone through epidemics as I have, or who is familiar with the history of the subject, and who has any capacity left for clear judgement, can doubt its value. Some months ago I was twitted by the Editor of the Journal of the Anti-Vaccination League for maintaining a curious silence on the subject. I would like to issue a Mount Carmel-like challenge to any ten unvaccinated priests of Baal. I will take ten selected vaccinated persons, and help in the next severe epidemic, with ten selected unvaccinated persons (if available!). I should choose three members of Parliament, three anti-vaccination doctors, if they could be found, and four anti-

vaccination propagandists. And I will make this promise—neither to jeer nor to jibe when they catch the disease, but to look after them as brothers; and for the three or four who are certain to die I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration.[49]

♂

Preventive medicine.

A blundering art until thirty or forty years ago, preventive medicine was made a science by the discovery of the causes of many of the serious epidemic diseases. To any one of you who wishes to know this side of science, what it is, what it has done, what it may do, let me commend Radot's *Life of Pasteur*, which reads like a fairy tale.[49]

♂

Cheapness of life—an every day tragedy.

The outlook for the world as represented by Mary and John, and Jennie and Tom, has never been so hopeful. There is no place for despondency or despair. As for the dour dyspeptics in mind and morals who sit idly croaking like ravens—let them come into the arena, let them wrestle for their flesh and blood against the principalities and powers represented by bad air and worse houses, by drink and disease, by needless pain, and by the loss annually to the state of thousands of valuable lives—let them fight for the day when a man's life shall be more precious than gold. Now, alas! the cheapness of life is every day's tragedy![49]

♂

Mankind in the childhood of

In our own day the gradual disappearance of native populations is due as much to whisky and disease

as to powder and shot, as witness in illustration of the one the North American Indian and of the other the Tasmanians. [50] civilization.

♁

We were foolish enough to think that where Christianity had failed Science might succeed, forgetting that the hopelessness of the failure of the Gospel lay not in the message, but in its interpretation. The promised peace was for the individual—the world was to have tribulations; and Christ expressly said: 'Think not that I am come to send peace on earth; I came not to send peace, but a sword.' The Abou ben Adhems woke daily from their deep dreams of peace, and lectured and published pamphlets and held congresses, while Krupp built 17-inch howitzers and the gun-range of the super-Dreadnoughts increased to eighteen miles. [50] The dream that wars would cease.

♁

Professor Haverfield shocked me the other day by remarking that the Greeks, with all their refinement, were a match for the worst of us to-day. This drove me to Thucydides, where I found a parallel with Belgium in the treatment of Melos by the Athenians. He gives the wonderful dialogue in a cold, clear style befitting the hard barbarity of the transaction. The delegates from Athens urged: 'What is right is estimated by the equality of power to compel.' 'The powerful exact what they can, the weak grant what they must.' The Melians wished to remain quiet and to be friends, and to force them to take sides they said would only make The Athenians and Melos.

enemies of all the neutrals—and then there were the gods. To which the Athenians replied: 'As regards the favour of heaven, we trust that we, too, shall not fall short of it: they always maintain dominion wherever they are the stronger.' It was the case of the Walrus and the Carpenter, and the Athenian delegates retired with the remark: 'We bless your simplicity; we do not admire your folly.' And Book V concludes in a twentieth century 'might is right' fashion: 'They surrendered at discretion to the Athenians who put to death all the male adults, and made slaves of the women and children ... as for the country, they inhabited it themselves.' [50]

♁

Scientific progress.

Organized knowledge, science, if living, must infiltrate every activity of human life. There was a difficulty in these islands, which of fruitful ideas, inventions, and discoveries have had the lion's share, but failed to grasp quickly their practical importance. The leaders of intellectual and political thought were not awake when the dawn appeared. The oligarchy who ruled politically were ignorant, the hierarchy who ruled intellectually were hostile. Read of the struggles at Oxford and Cambridge in the 'fifties' and 'sixties' of the last century to get an idea of the attitude of the intellectual leaders of the country towards 'Stinks', the generic term for science. It was not port and prejudice, as in Gibbon's day, but just the hostility of pure mediaeval ignorance. Those in control of education were more concerned with the issues of Tract 90 and the Colenso case than the conservation of

energy and *The Origin of Species*. To take but one example. What a change it might have wrought in rural England if, in 1840, when the distinguished Professor Daubeny was made Professor of Rural Economy, Oxford could have had great State endowment for an Agricultural College. The seed was abundant, and the soil was good, and only needed the cultivation that has been given so freely by members of the past generation, with what results we see to-day at Oxford and Cambridge and in the new universities.[50]

♁

Care of the wounded in Napoleon's time and to-day.

In no work do we get such a picture of the grim details of war as in the *Mémoires* of the famous Baron Larrey, Napoleon's favourite surgeon (Paris, 1813). The retreat across the desert from Syria and the retreat from Moscow mark the most terrible sufferings ever experienced by armies. Larrey was not only a great surgeon, but a lover of the soldier and devoted to his comfort. From his campaign on the Rhine, in 1789, we may date the beginning of the modern rapid transport of the wounded from the firing line. Previously the custom was to collect the wounded as soon as possible after the combat, which meant that they were often 24 or 36 hours on the field without assistance. Let me give you his own words, as they are memorable: 'La prise de Spire nous en ayant donné un assez grand nombre, j'eus la douleur d'en voir mourir plusieurs, victimes de cet inconvénient; ce qui me donna l'idée d'établir une nouvelle ambulance qui fût en état de poster de prompts secours sur le champ

de bataille même.' This was the origin of the famous *ambulance volante*, from which have evolved our modern methods of rapid transport. What would Larrey think of the flying ambulance of to-day—motor and train? One thing could not but please him—the development of the ambulance corps on lines laid down by him, and the big motor ambulances modelled on his *grandes voitures* with four horses which held four wounded recumbent.[50]

♁

A hospital camp.

Come with me 'somewhere in France,' to the top of a high down overlooking the sea. At our feet lies a city of tents, spread out for miles between the dunes and the downs, white and spotless against the evening sun. Lines are seen dividing sections of the encampment, and the scene reminds one of the description of the tents of Israel pitched in Moab and putting Balaam and Balak to sore perplexity. Figures in white and in khaki flit about, and now and again a motor lorry passes up the main line, but it is a peaceful scene on a summer's eve—in Picardy.

The camp is one of several big groups of British general and stationary hospitals. This one is made up of Durbar tents, in five or six separate units of from eight hundred to a thousand beds each. It was a novel experience, as I had never seen so many men under canvas, and the hospital wards were in big tents holding usually from twenty to thirty patients. The inner lining of the tent was of a coloured Cawnpore material with attractive patterns. More beautiful wards cannot be imagined,

so rich and varied in colouring, but I hasten to add that I did not see them in wind or rain. And to the call of country and humanity are come men and women from all parts of the English-speaking world—seasoned old veterans of the Army Medical Corps, consultants from London and Edinburgh, specialists of distinction, general practitioners, men from Australia and Canada looking after their special hospitals, with units of our brothers from Harvard University and from Chicago. Some of these groups, as that from McGill University, Montreal, have brought over a complete staff, with nurses and orderlies and all the necessary apparatus for a 1,040-bed hospital. Other Canadian University units have come from Toronto, Kingston, Laval, and Dalhousie. At home the members of these staffs are busy teachers and practitioners. The nurses have come from all parts of the Empire, and two groups from the United States—ministering angels all to the sick and wounded. Nothing could illustrate better the spirit of self-sacrifice and devotion which the Great War has awakened all over the world.[50]

The prevention of disease.

The second great victory of science in war is the prevention of disease. Apollo, the 'far darter,' is a greater foe to man than Mars. 'War slays its thousands, Peace its ten thousands.' In the Punjab alone, in twelve years, plague has killed two and a half millions of our fellow citizens. This year two preventable diseases will destroy more people in this land than the Germans. The tubercle

bacillus alone will kill more in Leeds in 1915 than the city will lose of its men in battle. Pestilence has always dogged the footsteps of war, and the saying is true—'Disease, not battle, digs the soldier's grave.' Bacilli and bullets have been as David and Saul, and at the breath of fever whole armies have melted away, even before they have reached the field. The fates of campaigns have been decided by mosquitoes and flies. The death of a soldier from disease merits the reproach of Armstrong:

'Her bravest sons keen for the fight have dy'd
The death of cowards and of common men—
Sunk void of wounds and fall'n without renown.'

This reproach science has wiped away. Forty years ago we did not know the cause of any of the great infections. Patient study in many lands has unlocked their secrets. Of all the great camp diseases—plague, cholera, malaria, yellow fever, typhoid fever, typhus, and dysentery—we know the mode of transmission, and of all but yellow fever the germs. Man has now control of the most malign of Nature's forces in a way never dreamt of by our fathers. A study of her laws, an observation of her facts—often of very simple facts—has put us in possession of life-saving powers nothing short of miraculous. The old experimental method, combined with the new chemistry applied to disease, has opened a glorious chapter in man's history. Half a century has done more than a hundred centuries to solve the problem of the first importance in his progress.

Briefly, four things have been determined about

the disease we call infectious. First, that there are specific germs, which breed true, often showing varieties, as is so common in nature. Secondly, these disease seeds, artificially grown, may be recognized by biological and chemical characters, and will reproduce the disease when injected into a susceptible animal. Thirdly, in the growth and multiplication of the germs there are changes in the body fluids, associated with the production of what is called immunity, and these changes may be artificially induced by inoculation with the germs or the products of their growth. And lastly, many important diseases are transmitted by insects—ticks, mosquitoes, flies, lice, and fleas.

The question was how to translate this knowledge into practical effect. Well, it has been done, and done in this war as never before in history. A victory had to be won first in the army itself, in insisting upon the importance of sanitary education for all officers, and here again we have to thank Lord Haldane. In a larger army than we have ever before had in the field the incidence of disease has often been lower than in times of peace. In the West there has been no great epidemic—neither dysentery, typhus, nor cholera; and typhoid fever, the soldier's foe, has so far been a negligible quantity. Think what it was in the German army in 1870–1, fighting over much the same ground and with an army of about the same size as our own, 74,204 cases and 8,904 deaths. Peculiar conditions have caused peculiar maladies, such as trench fever, trench feet, odd types of rheumatism and nephritis; but,

on the whole, when the figures come out for the first year of the war we shall find a great victory in the low death-rate from disease. In the East dysentery and forms of typhoid fever are troublesome, but the graver camp diseases such as cholera and typhus have not prevailed, and are not, I think, likely to do so.[50]

♀

The war and international science.

It was a noble motive that prompted the Warden and Fellows of New College [Oxford] to put upon the roll of honour in their hall the name of a German Rhodes scholar, one of her sons, though an enemy, who had fallen in battle for his country, an action resented by certain narrow-minded Philistines in the press. I should like to pay a last tribute of words to Paul Ehrlich, one of the masters of science, who has recently passed away. Many will recall with pleasure his outstanding position at the last International Congress of Medicine. In micro-biology and in the biochemistry of cells he was a creator, and no one of his generation contributed so much to our knowledge of the relations of living matter and chemical compounds. His studies on immunity form a new chapter in pathology. The climax of many years of patient work on the specific affinities of chemical substances for certain cells and for protozoa was reached in the discovery of '606' as a cure for syphilis. The brilliant labours of such a man transcend national limitations, and his name will go down to posterity with those of his countrymen, Virchow and Koch, as one of the creators of modern pathology.[50]

The extraordinary development of modern science may be her undoing. Specialism, now a necessity, has fragmented the specialities themselves in a way that makes the outlook hazardous. The workers lose all sense of proportion in a maze of minutiae. Everywhere men are in small coteries intensely absorbed in subjects of deep interest, but of very limited scope. Chemistry, a century ago an appanage of the Chair of Medicine or even of Divinity, has now a dozen departments, each with its laboratory and literature, sometimes its own society. Applying themselves early to research, young men get into backwaters far from the main stream. They quickly lose the sense of proportion, become hypercritical, and the smaller the field, the greater the tendency to megalocephaly. The study for fourteen years of the variations in the colour-scheme of the thirteen hundred species of tiger-beetles scattered over the earth may sterilize a man into a sticker of pins and a paster of labels; on the other hand, he may be a modern biologist whose interest is in the experimental modification of types, and in the mysterious insulation of hereditary characters from the environment.[56] **Specialization—its dangers.**

♢

At last the gospel of the right to live, and the right to live healthy, happy lives, has sunk deep into the hearts of the people; and before the war, so great was the work of science in preventing untimely death that the day of Isaiah seemed at hand, when a man's life should be 'more precious than fine gold, even a man than the golden wedge of Ophir.' **Philanthropia.**

There is a sentence in the writings of the Father of Medicine upon which all commentators have lingered, ἦν γὰρ παρῇ φιλανθρωπίη, πάρεστι καὶ φιλοτεχνίη—the love of humanity associated with the love of his craft—*philanthropia* and *philotechnia*—the joy of working joined in each one to a true love of his brother. Memorable sentence indeed, in which for the first time was coined the magic word 'philanthropy,' and conveying the subtle suggestion that perhaps in this combination the longings of humanity may find their solution, and Wisdom—*Philosophia*—at last be justified of her children.[56]

♁

Bed-side library for medical students.

A liberal education may be had at a very slight cost of time and money. Well filled though the day be with appointed tasks, to make the best possible use of your one or of your ten talents, rest not satisfied with this professional training, but try to get the education, if not of a scholar, at least of a gentleman. Before going to sleep read for half an hour, and in the morning have a book open on your dressing table. You will be surprised to find how much can be accomplished in the course of a year. I have put down a list of ten books which you may make close friends. There are many others; studied carefully in your student days these will help in the inner education of which I speak.

1. Old and New Testament.
2. Shakespeare.
3. Montaigne.

4. Plutarch's *Lives.*
5. Marcus Aurelius.
6. Epictetus.
7. *Religio Medici.*
8. *Don Quixote.*
9. Emerson.
10. Oliver Wendell Holmes—*Breakfast Table* Series. [51]

♁

Priority in a great discovery.

The extraordinary controversy which has raged, and re-raged every few years, on the question to whom the world is indebted for the introduction of anaesthesia, illustrates the absence of true historical perspective, and a failure to realize just what priority means in the case of a great discovery.

Why do we not give the credit to Dioscorides, who described both the general and local anaesthesia, or to Pliny, or Apuleius, or to Hiotho, the Chinaman, who seems to be next in order, or to the inventor of the *spongia somnifera*, or to Master Mazzeo Montagna, in Boccaccio, or to any one of the score of men in the Middle Ages who are known to have operated on patients made insensible by drugs or vapours? Why do we not give the credit to Davy, who had the idea; or to Hickman, who had both idea and practice; or to Esdaile, who operated on hundreds of patients in the hypnotic state; or to Elliotson, who did the same; or to Wells, who, in 1844, operated under nitrous oxide; or Long, who frequently practised ether anaesthesia? Why? Because time out of mind patients had been rendered insensible by potions or vapours,

or by other methods, without any one man forcing any one method into general acceptance, or influencing in any way surgical practice.

Before October 16, 1846, surgical anaesthesia did not exist; within a few months it became a world-wide procedure; and the full credit for its introduction must be given to William Thomas Green Morton, who, on the date mentioned, demonstrated at the Massachusetts General Hospital the simplicity and safety of ether anaesthesia. On the priority question, let me quote two appropriate paragraphs: 'He becomes the true discoverer who establishes the truth; and the sign of the truth is the general acceptance. Whoever, therefore, resumes the investigation of neglected or repudiated doctrine, elicits its true demonstration, and discovers and explains the nature of the errors which have led to its tacit or declared rejection, may certainly and confidently await the acknowledgements of his right in its discovery' (Owen, *Homologies of the Skeleton,* p. 26). 'In science the credit goes to the man who convinces the world, not to the man to whom the idea first occurs' (Francis Darwin, *Eugenics Review*, 1914). Morton convinced the world; the credit is his.[52]

♂

Benediction of friendship.

To have had the benediction of friendship follow one like a shadow, to have always had the sense of comradeship in work, without the petty pinpricks of jealousies and controversies, to be able to rehearse in the sessions of sweet, silent thought the experiences of long years without a single bitter

memory—to have and to do all this fills the heart with gratitude. That three transplantations have been borne successfully is a witness to the brotherly care with which you have tended me. Loving our profession, and believing ardently in its future, I have been content to live in it and for it. A moving ambition to become a good teacher and a sound clinician was fostered by opportunities of an exceptional character, and any success I may have attained must be attributed in large part to the unceasing kindness of colleagues and to a long series of devoted pupils whose success in life is my special pride. [53]

♁

Angelical conjunction of medicine and divinity.

As a boy it was my good fortune to come under the influence of a parish priest of the Gilbert White type, who followed the seasons of Nature no less ardently than those of the Church, and whose excursions into science had brought him into contact with physic and physicians. Father Johnson, as his friends loved to call him, founder and Warden of the Trinity College School, near Toronto, illustrated that angelical conjunction (to use Cotton Mather's words) of medicine and divinity more common in the sixteenth and seventeenth centuries than in the nineteenth. An earnest student of Sir Thomas Browne, particularly of the *Religio Medici*, he often read to us extracts in illustration of the beauty of the English language, or he would entertain us with some of the author's quaint conceits, such as the man without a navel (Adam), or that woman was the rib and crooked piece of man. The copy which I hold in my hand (J. T. Fields's edition of

1862), my companion ever since my schooldays, is the most precious book in my library. [54]

♁

History—the biography of the mind of man.

History is simply the biography of the mind of man; and our interest in history, and its educational value to us, is directly proportionate to the completeness of our study of the individuals through whom this mind has been manifested. To understand clearly our position in any science to-day, we must go back to its beginnings, and trace its gradual development, following certain laws, difficult to interpret and often obscured in the brilliancy of achievements—laws which everywhere illustrate this biography, this human endeavour, working through the long ages; and particularly is this the case with that history of the organized experience of the race which we call science. [55]

♁

How scientific truth is conditional.

Secondly, all scientific truth is conditioned by the state of knowledge at the time of its announcement. Thus, at the beginning of the seventeenth century, the science of optics and mechanical appliances had not made possible (so far as the human mind was concerned) the existence of blood capillaries and blood corpuscles. Jenner could not have added to his *Inquiry* a discourse on immunity; Sir William Perkin and the chemists made Koch possible; Pasteur gave the conditions that produced Lister; Davy and others furnished the preliminaries necessary for anaesthesia. Everywhere we find this invariable filiation, one event following the

other in orderly sequence—'Mind begets mind,' as Harvey says; 'opinion is the source of opinion.'[55]

The growth of Truth corresponds to the states of knowledge described by Plato in the *Theaetetus*—acquisition, latent possession, conscious possession. Scarcely a discovery can be named which does not present these phases in its evolution. Take, for example, one of the most recent. Long years of labour gave us a full knowledge of syphilis; centuries of acquisition added one fact to another, until we had a body of clinical and pathological knowledge of remarkable fullness. For the last quarter of a century we have had latent possession of the cause of the disease, as no one could doubt the legitimate inference from discoveries in other acute infections. The conscious possession has just been given to us. After scores of investigators had struggled in vain with the problem, came Schaudinn with an instinct for truth, with a capacity to pass beyond the routine of his day, and with a vision for the whole where others had seen but in part. It is one of the tragedies of science that this brilliant investigator, with capabilities for work so phenomenal, should have been cut off at the very threshold of his career. The cancer problem, still in the stage of latent possession, awaits the advent of a man of the same type. In a hundred other less important problems, acquisition has by slow stages become latent possession; and there needs but the final touch—the crystal in the saturated solution—to

The growth of truth.

give us conscious possession of the truth. But when these stages are ended, there remains the final struggle for general acceptance.[55]

♁

Modern acceptance of truth.

Locke's remark that 'Truth scarce ever yet carried it by vote anywhere at its first appearance' is borne out by the history of all discoveries of the first rank. The times, however, are changing; and it is interesting to compare the cordial welcome of the pallid spirochaete with the chilly reception of the tubercle bacillus. Villemin had done his great work, Cohnheim and Salmonson had finally solved the problem of infectivity, when Koch published his memorable studies. Others before him had seen the bacillus, but the conscious possession of the truth only came with his marvellous technique. Think of the struggle to secure acceptance. The seniors among us who lived through that instructive period remember well that only those who were awake when the dawn appeared assented at once to the brilliant demonstration. We are better prepared to-day; and a great discovery like that of Schaudinn is immediately put to the test by experts in many lands, and a verdict is given in a few months. We may have become more plastic and receptive, but I doubt it; even our generation—that great generation of the last quarter of the nineteenth century—had a practical demonstration of the slowness of the acceptation of an obvious truth in the long fight for the aseptic treatment of wounds.[55]

Joseph Lister.

There may be present some who listened, as I did in October, 1873, to an introductory lecture at one of the largest of the metropolitan schools, the burden of which was the finality of surgery. The distinguished author and teacher, dwelling on the remarkable achievements of the past, concluded that the art had all but reached its limit, little thinking that within a mile from where he spoke, the truth for which thousands had been striving—now a conscious possession in the mind of Joseph Lister—would revolutionize it. With scores of surgeons here and there throughout the world this truth had been a latent possession. Wounds had healed *per primam* since Machaon's day; and there were men before Joseph Lister who had striven for cleanliness in surgical technique; but not until he appeared could a great truth become so manifest that it everywhere compelled acquiescence. Yet not without a battle—a long and grievous battle, as many of us well knew who had to contend in hospitals with the opposition of men who could not—not who would not—see the truth.[55]

Iron yoke of conformity.

Sooner or later—insensibly, unconsciously—the iron yoke of conformity is upon our necks; and in our minds, as in our bodies, the force of habit becomes irresistible. From our teachers and associates, from our reading, from the social atmosphere about us, we catch the beliefs of the day, and they become ingrained—part of our nature. For most of us this happens in the haphazard process we call education, and it goes on just as long as we retain

any mental receptivity. It was never better expressed than in the famous lines that occurred to Henry Sidgwick in his sleep:

'We think so because all other people think so;
Or because—or because—after all, we do think so;
Or because we were told so, and think we must think so;
Or because we once thought so, and think we still think so;
Or because having thought so, we think we will think so.' [55]

♁

Escape from the routine.

In departing from any settled opinion or belief, the variation, the change, the break with custom may come gradually; and the way is usually prepared; but the final break is made, as a rule, by some one individual, the masterless man of Kipling's splendid allegory, who sees with his own eyes, and with an instinct or genius for truth, escapes from the routine in which his fellows live. [55]

♁

Pain of a new idea.

Walter Bagehot tells us that the pain of a new idea is one of the greatest pains to human nature. 'It is, as people say, so upsetting; it makes you think that, after all, your favourite notions may be wrong, your firmest beliefs ill-founded; it is certain that till now there was no place allotted in your mind to the new and startling inhabitant; and now that it has conquered an entrance, you do not at once see which of your old ideas it will not turn out, with which of them it can be reconciled, and with which it is at essential enmity.' It is on this account

that the man who expresses a new idea is very apt to be abused and ill-treated. All this is common among common men, but there is something much worse which has been illustrated over and over again in history. How eminent soever a man may become in science, he is very apt to carry with him errors which were in vogue when he was young—errors that darken his understanding, and make him incapable of accepting even the most obvious truths. It is a great consolation to know that even Harvey came within the range of this law—in the matter of the lymphatic system; it is the most human touch in his career.[55]

Period of latent possession.

By no single event in the history of science is the growth of truth, through the slow stages of acquisition, the briefer period of latent possession, and the period, so glorious for us, of conscious possession, better shown than in the discovery of the circulation of the blood. You will all agree with me that a Fellow of this college (Royal College of Physicians) must take his courage in both hands who would, in this place and before this audience, attempt to discuss any aspect of this problem. After nearly three centuries of orations the very pictures and books in this hall might be expected to cry out upon him. But I have so taken my courage, confident that in using it to illustrate certain aspects of the growth of truth I am but obeying the command of Plato, who insists that principles such as these cannot be too often or too strongly enforced. There is a younger generation, too, the members of which are never

the worse for the repetition of a good story, stale though it may be in all its aspects to their elders; and then there is that larger audience to be considered to which the season is never inappropriate to speak a word.[55]

♂

The experimental method.

No longer were men to rest content with careful observation and with accurate description; no longer were men to be content with finely spun theories and dreams which 'serve as a common subterfuge of ignorance': but here for the first time a great physiological problem was approached from the experimental side by a man with a modern scientific mind, who could weigh evidence and not go beyond it, and who had the sense to let the conclusions emerge naturally but firmly from the observations. To the age of the hearer, in which men had heard, and heard only, had succeeded the age of the eye, in which men had seen and had been content only to see. But at last came the age of the hand—the thinking, devising, planning hand; the hand as an instrument of the mind, now reintroduced into the world in a modest little monograph of seventy-two pages, from which we may date the beginning of experimental medicine.[55]

♂

Great discoveries—influence on medical thought.

No great discovery in science is ever without a corresponding influence on medical thought, not always evident at first, and apt to be characterized by the usual vagaries associated with human effort. Very marked in each generation has been the change wrought in the conceptions of disease and

in its treatment by epoch-making discoveries as to the functions of the body. We ourselves are deeply involved to-day in toxins and antitoxins, in opsonins, tulases, and extracts, as a direct result of the researches in bacteriology and in internal secretion.[55]

So restricted is the intellectual capital of the race that it goes easily on the seven-foot shelf of President Eliot's (of Harvard) library. The vast majority of all books are dead, and not one in ten thousand has survived its author. Like the race of leaves the race of books is. The Bodleian is a huge mausoleum. Books follow a law of nature. Thousands of germs are needed for the transmission of an individual of any species. In the case of the salmon only one in a thousand is fertilized, and of these not one in a thousand reaches maturity. So it is with books—a thousand or more are needed to secure the transmission of a single one of our very limited stock of ideas. Were all the eggs of all the salmon to reach maturity the sea could not contain this one species, while the world itself could not contain the books that would be written did even one in a thousand transmit a fertile idea. It is enough, as some one has said, if 'every book supplies its time with a good word.'[57]

Intellectual capital restricted.

Except Shakespeare, no writer has realized more keenly that all thoughts, all passions, all delights, and whatever stirs this mortal frame, minister to the one great moving impulse of humanity. It is

Robert Burton—*The Anatomy of Melancholy.*

not a little surprising that from a student of Christ Church, an old bachelor, and the Vicar of St. Thomas the Martyr, should have come the most elaborate treatise ever written upon love. There is no such collection of stories in all literature, no such tribute to the power of beauty, no such pictures of its artificial allurement, no such representation of its power of abasement. The thoughts and words of more dead writers are transmitted to modern readers by Burton than by any other seventeenth-century author. That the *Anatomy* is not in the cemetery of dead books is due to the saving salt of human sympathy scattered through its pages.[57]

♁

Harvey.

Bootless to ask, impossible to answer, is the question why Harvey delayed for twelve years the publication of his views. He seems to have belonged to that interesting type of man, not uncommon in every age, who knows too much to write. It is not a little remarkable that this reticence of learning has been a strong mental feature in some of the greatest of discoverers. Perhaps it was the motive of Copernicus, who so dreaded the prejudices of mankind that for thirty years he is said to have detained in his closet the *Treatise of Revolutions*. From what Harvey says, very much the same reasons restrained the publication of his work.[55]

♁

Knowing too much to write.

Men have been for years in conscious possession of some of the greatest of truths before venturing to publish them. Napier spent twenty years developing the theory of Logarithms; and Bacon kept

the *Novum Organum* by him for twelve years, and year by year touched it up—indeed, Rowley states that he saw twelve copies. Two other famous discoveries by Englishmen have the same curious history—the two which can alone be said to be greater than the demonstration of the circulation of the blood. Zachariah Wood speaks of Harvey as the surmiser of the little world, to distinguish him from another Englishman who first went about the greater world. But a greater than both—Isaac Newton—had grasped the secret of a cosmic circulation, and brooded in silence over the motions of the spheres for more than twenty years before publishing the *Principia*. Between the writing of the rough sketch in 1842 and the appearance of the *Origin of Species* seventeen years elapsed; and from the date of the journal notes, 1836, in which we have the first intimation of Darwin's theory, more than twenty years.[55]

♁

Truth may remain sterile, and why.

Even when full grown in the conscious stage Truth may remain sterile, without influence or progress on any aspects of human activity. One of the most remarkable of phenomena in mental biography is the failure of the Greeks to succeed after giving the world such a glorious start. They had every essential for permanent success: scientific imagination, keen powers of observation; and if in the days of Hippocrates the mathematical method of interrogating Nature prevailed rather than the experimental, Galen carried the latter to a degree of perfection never again reached until the time of

Harvey. Only when placed in its true position in relation to Greek religion and philosophy, as has been done so skilfully by Gomperz, do we realize the immensity of the debt we owe to those 'our young light-hearted masters.' And Gomperz makes clear the nature of the debt of Greek thought to the practical sense of the physicians. But alas! upon the fires they kindled were poured the dust and ashes of contending philosophies, and neither the men of the Alexandrian school nor the brilliant labours of the most encyclopaedic mind that has ever been given to medicine sufficed to replenish them. Fortunately, here and there amid the embers of the Middle Ages glowed the coals from which we have lighted the fires of modern progress. The special distinction which divides modern from ancient science is its fruitful application to human needs—not that this was unknown to the Greeks; but the practical recognition of the laws of life and matter has in the past century re-made the world. In making knowledge effective we have succeeded where our masters failed. But this last and final stage, always of slow and painful consummation, is evolved directly from truths which cannot be translated into terms intelligible to ordinary minds. Newton's great work influenced neither the morals nor the manners of his age, nor was there any immediate tangible benefit that could be explained to the edification or appreciation of the 'ordinary man' of his day; yet it set forward at a bound the human mind, as did such truths as were proclaimed by Copernicus, by Kepler, by Darwin, and others.

In a less conspicuous manner Harvey's triumph was on the same high plane.[55]

♁

Bacon's writings—nicely tasteless and correctly dull.

History repeats itself. Greek philosophy, lost in the wandering mazes of all restless speculation, was saved by a steady methodical research into nature by Hippocrates and by Aristotle. While Bacon was philosophizing like a Lord Chancellor, two English physicians had gone back to the Greeks. 'Searching out nature by way of experiment' ('tis Harvey's phrase), William Gilbert laid the foundation of modern physical science, and William Harvey made the greatest advance in physiology since Aristotle. Recking not his own rede, Bacon failed to see that the works of his contemporaries were destined to fulfil the very object of his philosophy—the one to give man dominion over the macrocosm, the world at large; the other to give him control of the microcosm, his own body. A more striking instance of mind-blindness is not to be found in the history of science. Darkly wise and rudely great, Bacon is a difficult being to understand. Except the *Essays*, his books make hard reading. In the *Historia Naturalis*, a work of the compiler class, one would think that a consideration of Life and Death would so far fire the imagination as to save an author from the sin of dullness. Try to read it. A more nicely tasteless, more correctly dull treatise was never written on so fruitful a theme. There is good sense about medicine and nature, but with the exception of the contrast between youth and old age, which has

a fine epigrammatic quality, the work is as dry as shoe-leather, and the dryness is all his own, as other authors are rarely quoted. Only a mollusc without a trace of red marrow or red blood could have penned a book without a page to stir the feeling and not a sentence with a burr to stick in the memory. Bacon students should study the lengthy consideration given in it to the spirits, and then turn to Schmidt's *Lexicon* to see how very different in this respect are the motions of Shakespeare's spirit. The truth is, Bacon had in a singular degree what an old Carthusian (Peter Garnefelt) called 'the gift of infridation.'

What a contrast when a creator deals with Life and Death. The thoughts of the race are crystallized for ever. From Galen to Laurentius, physicians have haggled over the divisions of the ages of man, but with a grand disregard of their teaching Shakespeare so settles the question that the stages are stereotyped in our minds. We can only think of certain aspects in terms of his description. The vicissitudes of every phase are depicted. The shuddering apprehension of death we can only express in his words.[57]

♂

The best transmuters are the fruitful creators.

Whether the benches of this school would seat the members of our third group, the creators, would depend very much on the judgement of Prospero. Thus, to Harvey claiming admission, he might say, 'You simply took the idea of a movement of the blood which had been current knowledge since Solomon, and by experiment demonstrated a motion

in a circle and not by ebb and flow.' And this is true. Without Aristotle, Galen, and Fabricius, there would have been no Harvey. Transforming their raw ores by methods all his own, he made the *De Motu Cordis*, 1628, a new creation in the world of science. Not by the material, not by the method of its manufacture, but by the value of the finished product is the author's position to be judged. In science the best transmuters have been the fruitful creators. The same law holds in Art and in Literature. The alchemy of Shakespeare made him a great creator. 'Self-school'd, self-scann'd, self-honour'd, self-secure,' in heaven-sent moments he turned the common thoughts of life into gold. From Carlyle and Emerson, the teachers who stirred our hearts, the youth of my day had a final judgement upon Shakespeare. [57]

Bio-bibliography.

Not naturally dry, bibliography is too often made so by faulty treatment. What more arid than long lists of titles, as dreary as the genealogies of the Old Testament, or as the catalogue of the ships in Homer! What more fascinating, on the other hand, than the story of the book as part of the life of the man who wrote it—the bio-bibliography! Such, for example, is the recent bibliography of Samuel Johnson, issued by the Oxford Press, from the pen of that master of the subject, the late William Prideaux Courtney, which shows us, even better than does Boswell, the working ways of the great lexicographer. To be of value to the full-fed student of to-day a bibliography should be a

Catalogue raisonné, with judicious remarks and explanations.[58]

♂

Nerve.

It is not alone the capacity to draw on all the resources available that enables a man to rise superior, as we say, to an emergency, to mobilize forces which are not called upon in everyday life, but which are on tap. There is with it a consciousness of power, which comes from a knowledge of the machine and of its capacities, with a self-control which never for a moment loses grip of the wheel. In peril it is nerve which enables a man to act promptly and surely. A pilot 6,000 feet up who could swing with the right arm under his machine and do a bit of essential repair had nerve. I saw a surgeon open a big artery accidentally—a terrifying spurt of blood; a glance of the eye brought the assistant's finger on the main trunk of the vessel, and the surgeon coolly turned, scrubbed his hands afresh, and very quietly gave the nurse directions to get ready the necessary instruments. No fuss or fluster; just the quiet nerve in control of the situation, the nerve of knowledge. An extraordinary feature in the human machine is its reserve stores of energy. You cannot get 30 horse-power work out of a 20 horse-power motor, but you can change a 50 horse-power man into one of 100 or more. That is because we habitually work at only about 25 to 30% of our capacity—mental or physical. Take in illustration the most wonderful engine ever built—the heart: in not one of you is it working 25% of its capacity. Some years ago, at Columbia

University, New York, I heard that American Socrates, William James, deliver a remarkable address on 'The Energies of Men,' in which he contended that our organism has stored up reserves of energy ordinarily not in use, but that may be called upon; deeper and deeper strata of material ready for use, on tap if we care to call upon it. Run a hundred yards, a sense of tire or fatigue comes, and we get short of breath—some of us would be pulled up at fifty yards—and if we go on there comes a moment when we feel we must stop; but force yourself, and something surprising happens. The sense of fatigue passes away, and we are able to go on—a man has got what is called second wind, he has tapped a new level of energy. And there is the same phenomenon in mental states. Beyond the point of fatigue-distress may be found 'amounts of ease and power we never dreamt ourselves to own—sources of strength habitually not taxed at all, because habitually we never push through the obstruction, never pass those early critical points.' Our energy budget has really never been exploited. Kipling has the secret in a verse in the famous poem 'If':—

'If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And hold on when there is nothing in you
Except the Will which says to them "hold on".'[59]

Jumpiness.

There is a state the very opposite of that of which we have been speaking, seen in man and nations, and best described by the word *nerves*, a word not

in the dictionary. It is slang, but we all know the meaning, the unstrung state, the inability to get work, or the best work, out of the machine, a jumpiness and instability. A man may inherit a weak, irritable, nervous system, another may spoil a good one with bad habits or bad training, or a good one may be shocked out of action by the blows of circumstance. In any case the chauffeur loses control of the machinery. [59]

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Medical profession in war.

From the days of Homer, Apollo, the 'far darter,' has been a much more formidable foe than his colleague Mars. With the two in conjunction unspeakable woes afflict the sons of men. In his great strait, David, you remember, chose three days of pestilence as the equivalent of three months' military disaster. To-day the front of Mars is wrinkled, the world is at war, and the problem for the children of Aesculapius is to keep grandfather Apollo from taking a hand in the fray. In this game another member of the family, Hygeia, holds the trump card, and gives victory to the nation that can keep a succession of healthily efficient men in the field. The Empire is confronted with a great task, in the successful performance of which the medical profession may play a leading part. [60]

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Camp diseases.

Of the camp diseases, typhus, malaria, cholera, dysentery, and typhoid fever, it is a reasonable hope that the armies of the West will escape the first three. Dysentery is pretty sure to cause trouble;

but with regard to enteric fever we are on trial as a nation and as a profession, in what way it will be the object of this address to show.

The nineteenth century saw the discovery of the cause of typhoid fever, the recognition of its transmission through polluted water or milk, and the enforcement of sanitary measures, which have caused a steady and gratifying reduction in its prevalence. Those of us brought up upon the writings of Simon, Buchanan, Budd, and Murchison, and convinced of the truth of the water-borne and milk-borne theories, were often confronted with epidemics in schools and barracks and private houses in which it was not possible to trace the infection to either of these sources. Yet experience lent little support to a doctrine of direct contagion. There was some other factor. Even with the purest supply of water and of milk, cases would crop up and local outbreaks occurred. Within the past ten or fifteen years we have not only filled gaps in the etiological picture, but we have added so many details that the canvas is approaching completion.

Typhoid: the individual case as a factor in infection.

Though the infectiveness was recognized, only within the past decade have clinicians made it an essential feature to completely sterilize the dejecta, urine and faeces, and to avoid all possible contamination about the patient. As in surgery, we have changed the antiseptic to an aseptic battle, and nowadays the physician feels [it] as keen a duty to

keep the surroundings of a patient sterile as to treat his symptoms.

This in itself is a great gain, as the possibility of the abolition of the disease is a problem of the sterilization of the individual cases as they occur. I cannot here enter into the question of the methods of conveyance, but it is sufficient to say we have recognized fingers and flies as two of the chief, and the special liability in houses and wards of food contamination.[60]

Deaths from typhoid inoculation.

Reports of death as a result of the typhoid inoculation are false. Dr. Selby wrote from Aldershot (October 17, 1914):

'This morning I was trying to persuade my Kitchener army men to be inoculated, when I was confronted by one man who said he went down to Shorncliffe last week-end, and that there they had told him that three men had died within twenty-four hours of inoculation.'

I wrote to Colonel Wilson, who replied (October 17, 1914) that there had been no death from this cause, and giving particulars of the fatal cases from accident or disease since the formation of the camp.

The Beaujon Hospital nurse, Paris, whose case is so often quoted, died of typhoid fever a month after the last inoculation. She might very possibly have contracted the disease previously. The Neckar Hospital nurse received therapeutic injections of typhoid serum during the course of the disease, not a protective inoculation.

Private Pantzer of the National Guard, Brooklyn,

died of malignant endocarditis, and the inoculation had nothing to do with his fatal illness.[60]

Typhoid fever in the Spanish-American war.

Neither the profession nor the people at large appreciate fully the extraordinary sanitary advantages enjoyed by this country (England). In medical practice, if I were asked to state the most striking difference between England and the United States and Canada, I should say the absence of enteric fever in hospitals and private work. The tragedy of typhoid fever was ever present, and one felt constantly outraged at the wantonness of the sacrifice. In full measure the tragedy was brought home to the United States during the Spanish-American war. There never has been in history a campaign so fatal to an army not yet in the field. Listen for a moment to a story of what may happen after mobilization in a typhoid-ridden country. Returning to the United States from a visit to England in the autumn of 1898, I found but one subject engaging the attention of the profession—the appalling outbreak of typhoid fever in the volunteer army, distributed in seven camps in different parts of the country. The figures published by Reed, Vaughan, and Shakespeare in their elaborate report, of which a good epitome is given by Dr. Christopher Childs, show that in six months, among 107,973 men, there were 23,738 cases of typhoid fever and 1,580 deaths. At Camp Alger, near Washington, with a mean strength of 21,988 men, there were 1,951 cases of typhoid fever. Never have I seen so many cases of fever concen-

trated together; barrack after barrack filled with the victims of neglected sanitary precautions. The lesson drawn by the authors of the report on this epidemic was that the disease was not water-borne, but that nearly two-thirds of the cases were examples of 'connectible attacks'—that is, due to infection within the tent or from adjacent tents. It was the first great epidemic to call attention to the importance of local infection by means of fingers, food, and flies. Two other points were brought out—the frequency with which erroneous diagnosis was made, particularly in the southern camps, where many cases were supposed to be malaria; and the large number of minor attacks indicated by nothing more than transient malaise, slight fever, or a gastro-intestinal attack.[60]

Typhoid fever in the World War.

More than three months have passed, and the reports from the camps indicate that nowhere is typhoid fever prevalent. That isolated cases have occurred should make the medical officers of health and the military surgeons redouble their efforts to prevent the spread. These should be watched with the utmost care, since, as Dr. Childs points out, epidemics in camps are usually preceded by scattered cases or by the unusual prevalence of diarrhœa. *Watch the common ailments*, should be the motto of the camp surgeons. The following measures are indicated:—

1. Every recruit should be asked whether he has had typhoid fever, or if during the previous twelve months he has lived in a house with a case of fever.

An affirmative answer should mark the man for laboratory study. This may seem an irksome precaution, but in preventive medicine nothing necessary is irksome.

2. A realization of the extremely protean character of typhoid fever, so that mild cases of enteritis, obscure forms of bronchitis and pneumonia, and mild cases of fever should be watched with care.

3. Every typhoid patient should be regarded as a focus of infection, and should be suspected as long as the bacilli are present in the discharges. The cases should not be treated in the general wards with other cases. Measures should be taken in the larger camps and in the garrison towns to segregate the cases.

4. No typhoid patient should receive a clean bill of health until he has been shown by bacteriological examination to be harmless.

5. Ample provision should be made for the careful bacteriological examination of all suspected cases.[60]

Fever in various forms has proved more destructive to armies in the field than powder and shot. It has been well said that bullets and bacilli are as Saul and David, 'Saul has slain his thousands and David his ten thousands.' The story of the destructive character of fevers has never been so well demonstrated as in the great Civil War of the United States, during which malaria, dysentery, typhoid fever, and other diarrhœal diseases were fatal foes. Woodward's *Report of the Medical History of the War of the Rebellion* is a perfect storehouse of information on camp diseases. It is not easy to

Bullets and bacilli.

pick out the exact percentage of typhoid fever, as a large proportion diagnosed as diarrhœa and many of malaria belong to this disease; but the official figures for the army of the North are sufficiently appalling—79,455 cases and 29,336 deaths. There is the same story in the Franco-Prussian War; among the German troops there were 8,000 deaths from typhoid fever, 60 per cent. of the total mortality. It is said that the typhoid fever existed in every army corps at the outbreak of the war, and the campaigns were carried on largely in infected regions. I have already referred to the terrible experience, in the Spanish-American war, among the volunteer troops in the home camps. The sad memories of the South African war still haunt the memory. That was a war which brought out many new details in campaigning, but the sternest lesson taught is the one we are now considering, as it, too, was a war in which the bacilli counted for more than the men. Of the 22,000 lives lost, the enemy is debited with only 8,000; preventable febrile diseases for 14,000. And amongst these, as usual, typhoid fever headed the list, 57,684 cases, of whom 19,454 were invalided, and 8,022 died. The *Bacillus typhosus* alone did more damage than the Boers. Here again, as in the Spanish-American war, it was not so much water-borne typhoid fever as camp infection by fingers, flies, dust, and food.[60]

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Typhoid inoculation.

We are now in the fourth month of the war, and, so far as one can gather from the somewhat meagre reports, the health of the troops at the front has

not been damaged to any extent by fever, and, so far, the sad losses have been from bayonets and bullets. On active service the soldier may take typhoid fever with him, or he may find it in the country. A large body of men has a certain percentage of carriers, any one of whom may act as a focus of distribution. The conditions in camp life are peculiarly favourable to carry infection; thus it would be impossible for a carrier cook not to contaminate the food of an entire company. Of equal moment is the state of the country in which the troops are working. During the Spanish-American war it was not possible in the United States to locate a camp in a typhoid-free position. In this country it is not possible to pitch a camp in an infected district. In South Africa both conditions prevailed; infection was brought by the soldiers, and was abundant in the country. It seems not unlikely that the troops in France and Belgium are reaping the benefit of the past ten years of active campaign against typhoid fever. Details are not at hand as to the prevalence of the disease in the eastern and north-eastern regions of France, but I am told there has been a great reduction in the incidence of the disease in Belgium, and that the troops have heretofore suffered but little. The Rhenish provinces should reap the benefit of the remarkable antityphoid campaign of the past ten years. Certainly it is very gratifying, particularly at this season of the year, that comparatively few cases have occurred. Among 2,000 German, English, and Belgian troops who have been, or are

at present, in the base hospital at Oxford, there have been only five cases of typhoid fever; and this I believe to be the experience in other large hospitals throughout the country. It will be a great triumph to go through this war without a devastating experience of typhoid fever. In the fighting line it is not possible always to ask the soldier to carry out sanitary precautions, and in a very infected country, even with the best of intentions, he cannot avoid exposure. Here we may expect to find the protective value of inoculation, and it is very satisfactory that the value of the measure has been so generally recognized by officers and men. An immense proportion of those who go with the Expeditionary Forces will have been protected—for a period at least. While with our present knowledge we cannot but regret that the inoculation has not been made compulsory, let us hope that a sufficient number have taken advantage of the procedure to make impossible a repetition of the enteric catastrophe in South Africa.[60]

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Burning of Michael Servetus.

The year 1553 saw Europe full of tragedies, and to the earnest student of the Bible it must have seemed as if the days had come for the opening of the second seal spoken of in the Book of Revelation, when peace should be taken from the earth and men should kill one another. One of these tragedies has a mournful interest this year, the four hundredth anniversary of the birth of its chief actor; yet it was but one of thousands of similar cases with which the history of the sixteenth century is

stained. On October 27, shortly after 12 o'clock, a procession started from the town hall of Geneva —the chief magistrates of the city, the clergy in their robes, the Lieutenant Criminel and other officers on horseback, a guard of mounted archers, the citizens, with a motley crowd of followers, and in their midst, with arms bound, in shabby, dirty clothes, walked a man of middle age, whose intellectual face bore the marks of long suffering. Passing along the rue St. Antoine through the gate of the same name, the *cortège* took its way towards the Golgotha of the city. Once outside the walls, a superb sight broke on their view: in the distance the blue waters and enchanting shores of the Lake of Geneva, to the west and north the immense amphitheatre of the Jura, with its snow-capped mountains, and to the south and west the lovely valley of the Rhone; but we may well think that few eyes were turned away from the central figure of that sad procession. By his side, in earnest entreaty, walked the aged pastor, Farel, who had devoted a long and useful life to the service of his fellow citizens. Mounting the hill, the field of Champel was reached, and here on a slight eminence was the fateful stake, with the dangling chains and heaping bundles of faggots. At this sight the poor victim prostrated himself on the ground in prayer. In reply to the exhortation of the clergyman for a specific confession of faith there was the cry, 'Misericordia, misericordia! Jesu, thou Son of the eternal God, have compassion upon me.' Bound to the stake by the iron chain, with a

chaplet of straw and green twigs covered with sulphur on his head, with his long dark face, it is said that he looked like the Christ in whose name he was bound. Around his waist were tied a large bundle of manuscript and a thick octavo printed book. The torch was applied, and as the flames spread to the straw and sulphur and flashed in his eyes, there was a piercing cry that struck terror into the hearts of the bystanders. The faggots were green, the burning was slow, and it was long before, in a last agony, he cried again, 'Jesu, thou Son of the eternal God, have mercy upon me.' Thus died, in his forty-fourth year, Michael Servetus Villanovanus, physician, physiologist, and heretic. Strange, is it not, that could he have cried, 'Jesu, thou Eternal Son of God,' even at this last moment the chains would have been unwound, the chaplet removed, and the faggots scattered; but he remained faithful unto death to what he believed was the Truth as revealed in the Bible.[61]

Opinions of Michael Servetus.

Bossuet defines a heretic as 'one who has opinions.' Servetus seems to have been charged with opinions like a Leyden jar. His most notable ones concerned the Trinity and Infant Baptism. Wracked almost to destruction in the third and fourth centuries on the subject of the Trinity, the final conquest of Arianism found its expression in that magnificent human document the Athanasian Creed, with which the Catholic Church has for ever settled the question, in language which sends a cold shudder down the backs of heretics. But there have always been

turbulent souls who could not rest satisfied, and who would bring up unpleasant points from the Bible—men who were not able to accept Dante's wise advice: 'Mad is he who hopes that our reason can traverse the infinite way which one Substance as Three Persons holds. Be content oh human race with the Quia.'

The doctrine has been a great breeding-ground of heretics, the smoke of whose burning has been a sweet savour in the nostrils alike of Catholics and Protestants. Even to-day, so deeply ingrained is the Catholic Creed that nearly everything in the way of doctrinal vagary is forgiven save denial of the Trinity, which is thought to put a man outside the pale of normal Christianity. If this is the feeling to-day, imagine what it must have been in the middle of the sixteenth century![61]

Servetus the student.

Servetus was a student of medicine in Paris with Sylvius and Guinther, two of the most ardent of the revivers of the Galenic anatomy. More important still, he was a fellow-student and pro-sector with Vesalius. He wrote one little medical book of no special merit. The works which he edited, which brought him more money than fame, indicate an independent and critical spirit. Vienne was a small town, in which we cannot think there was any scientific stimulus, though it was in a region noted for its intellectual activity.[61]

Pulmonary circulation, a discovery.

In possession of a fact in physiology of the very first moment, Servetus described it with extra-

ordinary clearness and accuracy. But so little did he think of the discovery, of so trifling importance did it appear in comparison with the great task in hand of restoring Christianity, that he used it simply as an illustration when discussing the nature of the Holy Spirit in his work *Christianismi Restitutio.* The discovery was nothing less than that of the passage of the blood from the right side of the heart to the left through the lungs, what is known as pulmonary, or lesser circulation. . . . By an alternate movement of dilatation and collapse of the arteries the blood with the vital spirits were kept in constant motion. Galen had demonstrated that the arteries and the veins communicated with each other at the periphery. A small quantity of the blood went, he believed, from the right side of the heart to the lungs, for their nourishment, and in this way passed to the left side of the heart; but the chief communication between the two systems was through pores in the ventricular septum, the thick muscular wall separating the two chief chambers of the heart.[61]

Summary of the views of Servetus on pulmonary circulation.

The important elements here are: First, the clear statement of the function of the pulmonary artery; secondly, the transmission of the impure or venous blood through the lungs from the right side of the heart to the left; thirdly, the recognition of an elaboration or transformation in the lungs, so that with the freeing the blood of 'fuliginous vapours,' there was at the same time a change to the crimson colour of the arterial blood; fourthly, the direct

denial of a communication of the two bloods, by means of orifices in the septum between the ventricles.

He had no idea of the general or systematic circulation, and so far as the left heart and the arteries were concerned he believed them to be the seat of the vital blood and spirits.[61]

There are two aspects to the educational problem: (1) the getting of knowledge, which is not, after all, a very difficult thing to do. The question is whether, under some circumstances we have not a little too much knowledge. We perhaps are sometimes embarrassed by the knowledge we have. The knowledge which we have of tuberculosis is really enormous. When you think what an influence the last century has had on this subject of knowledge, it is one of the most remarkable of human achievements. (2) The second aspect is the difficult problem; making this knowledge effective; getting sense and getting wisdom; these are totally separate and distinct. Never was a more appropriate word said than that by Tennyson, 'Knowledge comes but wisdom lingers.' There are three to educate: the public, the profession, and the patient. The public is awake; sitting on the edge of the bed not yet dressed, but still it is an improvement even to get the public awake. With this awakening the rest is sure to follow. . . .[62]

Two aspects of education.

The education of the profession is as difficult as the education of the public, as we are members of

Education of the

profession: early diagnosis.

the public. We have their peculiarities to a marked degree and their failings in a minor intensity. The early recognition is the first and most important duty. This is by no means easy. . . .[62]

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Education of the patient.

Lastly, the education of the patient. . . . There is no greater mistake than to keep from the patient the knowledge that she has tuberculosis in its early stages, as it is only by having that knowledge that she can be expected to recover. We are criminal participants with the friends if we refuse to tell the patient exactly the nature of the trouble.[62]

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Experimental medicine and public health.

It is through the experimental side of medicine, the experimental spirit in medicine, that these great revolutions have been effected, revolutions with which there is nothing else in human endeavour to compare from the standpoint of humanity. There is not anything else in the whole development of the British nation that is going to have so much importance as the discovery of the mode of transmission of malaria. It is going to make the tropics habitable. And all this has come about through the experimental method and the experimental spirit. Without these such investigations could not have been made, and these perfectly phenomenal results could not have been achieved. It was the same spirit that gave us anaesthesia, and the same spirit that has given us antiseptic surgery, and the same spirit that has given us preventive medicine—three things which stand out in the record of human achievement, with which nothing else may be compared—

I mean from the standpoint of everyday common humanity. . . . The men who made these investigations spent their lives in laboratories, and their whole work has been based on experimentation on animals. They could not otherwise, of course, have ventured to devise a series of experiments of this sort.[63]

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Three outstanding events.

The evolution of our present hopeful condition, like that of organic life, looks uniform; but examined more closely this uniformity disappears in a deeper parallel—the sudden intrusion of apparently new forces which have changed the broad surface of humanity quite as profoundly as did, for example, the glacial period the biology of the northern portions of the globe. Three outstanding events have loosened as a spring the pent-up energies of the modern world—the Greek civilization, the geographic renaissance of the sixteenth century, and the scientific awakening of the nineteenth century. Greek thought not only stripped man for the race, but Greek methods gave him correct principles of training, and clear ideas of the nature of the race to be run. Collectively we follow to-day occidental, Greek ideals, and what makes Western civilization such a tissue of inconsistencies is the injection, Anno Domini, of an oriental morality which controls the individual, while powerless to sway the nations. The geographic renaissance has given to the progressive peoples of Europe a new pinnacle of outlook. To the lust of conquest succeeded the lust of commerce, to be followed by the burning

zeal to evangelize; and then a steady, sober plan of settlement which has encircled the earth with new nations. And the third great outburst of energy is the scientific awakening of the nineteenth century, which has not only placed in his hands a heretofore undreamed-of capacity for material progress, but has given to man such a control of nature that at a stroke is removed the chief obstacle to a world-wide dominion.[64]

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The ascent of man began in the tropics.

The expansion of modern Europe, the completion of which was one of the great features of the latter part of the nineteenth century, has opened a broader vista than ever before looked on by humanity. The ascent of man began in the tropics, where the conditions of nature made life easy, and at least four of the six great ancient civilizations—the Egyptian, Phoenician, Assyrian, and Babylonian—rose and fell within, or close to the tropics. Once only in modern times has a tropical people, reaching a high grade of civilization, spread far and wide, in the magic outburst with which the Arabians shook the very foundations of Christianity. In the last four centuries the expansion of Europe has changed the map of the world, and in conflict with the old civilizations in North and South America, and by wholesale appropriations in Asia and Africa, the children of Japhet have gone forth with the Bible in one hand and the sword in the other conquering and to conquer, taking the uttermost parts of the earth for their possession. In the course of this period they have partitioned among them one hemi-

sphere, two continents, and a large part of a third. . . . The tropical world has been appropriated. . . . It is no light burden for the white man to administer this vast trust. . . . In dealing with subject nations there are only two problems of the first rank—order and health. The first of these may be said to be a speciality of the Anglo-Saxon. . . . The responsibility is upon the nation to maintain certain standards which our civilization recognizes as indispensable on the supposition that our Western ideas are right; but we have to meet the fact that the ways of the natives are not our ways, nor their thoughts our thoughts; and yet we place them in such a position that sooner or later they become joint heritors with us of certain civil and social traditions and aspirations. . . . The second great function of the nation is to give to the inhabitants of the dependencies, Europeans or natives, good health—a freedom from plague, pestilence, and famine. . . .[64]

Modern sanitation; its place in nineteenth-century history.

When the historian gets far enough away from the nineteenth century to see it as a whole, perhaps one feature above all others will attract his attention, since amid all the movements of that wonderful period it has been most directly beneficent to the race. Political, social, religious, intellectual revolutions will demand his comments, but if I am not greatly mistaken the movement upon which he will dwell longest will be the introduction of modern sanitation.[64]

The quest for righteousness is

The quest for righteousness is oriental, the quest for knowledge occidental. With the great prophets

oriental; for knowledge occidental.

of the East—Moses, Isaiah, Mahomet—the word was, 'Thus saith the Lord'; with the great seers of the West, from Thales and Aristotle to Archimedes and Lucretius, it was 'What says Nature?' They illustrate two opposite views of man and his destiny—in the one he is an *angelus sepultus* in a muddy vesture of decay; in the other, he is the 'young, light-hearted master' of the world, in it to know it, and by knowing to conquer. Modern civilization is the outcome of these two great movements of the mind of man, who to-day is ruled in heart and head by Israel and by Greece. From the one he has learned responsibility to a Supreme Being, and the love of his neighbour, in which are embraced both the Law and the Prophets; from the other he has gathered the promise of Eden to have dominion over the earth on which he lives. Not that Israel is all heart, nor Greece all head, for in estimating the human value of the two races, intellect and science are found in Jerusalem and beauty and truth at Athens, but in different proportions. It is a striking fact that there is no great oriental name in science—not one to be put in the same class with Aristotle, with Hippocrates, or with a score of Grecians.[65]

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Aristotle.

Readers of my occasional addresses will have noted frequent references to the work of Professor Gomperz on *Greek Thinkers*, Volume IV of which has just appeared. To young men with leisure, young practitioners in the waiting stage, who wish to keep the dough of their minds leavened, let me

commend these volumes. An hour a day, or less, for a year, with a note-book, and I can promise the best of company, and a stimulating diet, full of intellectual hormones. If it be true that a man is born a Platonist or an Aristotelian, my congenital bias was towards the great idealist, but without, I fear, the proper mental equipment; the cares of this world and the deceitfulness of my studies have driven me into the camp of the Stagirite. And it is a glorious tribe, to be sealed of which, even as a humblest member, one should be proud. In the first circle of the *Inferno* Virgil leads Dante into a wonderful company, the philosophic family who look with reverence on 'the Master of those who know'—and so with justice has Aristotle been regarded for these twenty-three centuries. No man has ever swayed such an intellectual empire—in logic, metaphysics, rhetoric, psychology, ethics, poetics, politics, and natural history, in all a creator and in all still a master. The history of the human mind offers no parallel to the career of the great Stagirite. It is as a biologist that Aristotle has a special interest for us. . . .

Before Aristotle there were other great students of nature among the Greeks, but he first taught men to look upon nature's naked loveliness—to use Shelley's phrase. . . . The son of a physician, Aristotle saw, as no one had seen before, the value of science in medicine.[66]

Astruc.

It is strange how the memory of a man may float to posterity on what he would have himself regarded

as the most trifling of his works. Ask in succession a score of doctors, 'Who was Astruc? and the expression aroused indicates that at least in our profession he is 'clean forgotten, as a dead man out of mind'; and yet librarians and dealers in second-hand books know only too well what a prolific writer he was in the first half of the eighteenth century. But ask any theologian, any man interested in the history of the Bible, the same question and his face at once brightens—or darkens—as he replies, 'Oh, Jean Astruc, he was the founder of modern biblical criticism.' And so it is that the man whom we have forgotten, who cut such a figure in the profession at Montpellier and Paris, the enumeration of whose tomes extends to three columns in the *Biographie médicale* (by Bayle and Thillaye, 1855), is remembered to-day by a small octavo volume published anonymously in 'Brussels' ('Bruxelles', but really in Paris), 1753, with the title 'Conjectures sur les Mémoires Originaux dont il paroît que Moyse s'est servi pour composer le Livre de la Genèse. Avec des Remarques, qui appuient ou qui éclaircissent ces Conjectures'. . . . extending to 525 pages, fully one-half of which is taken up with a critical consideration of his views. . . .

A study of the documents forced the conclusion that Moses had access to many ancient documents describing the world since the creation, coming from different sources and varying in detail. He patched them together one after another, thus forming the book of Genesis as we have it. . . . Astruc's notable discovery was the recognition that

in Genesis there are two separate accounts of the Creation and of the early days of the world, the one extending as far as verse 3 of Chapter II, in which the Creator is spoken of as Elohim, the other extending from verse 4 of Chapter II to the end of Chapter IV, in which the Creator is called Jehovah. . . . Astruc recognized other sources, and prints in parallel columns under A, B, C, D the four most important.[67]

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Treatment.

As true to-day as when Celsus made the remark, 'The dominant view of the nature of the disease controls its treatment.' As is our pathology so is our practice; what the pathologist thinks to-day the physician does to-morrow. Roughly grouped, there have been three great conceptions of the nature and treatment of disease.

(*a*) For long centuries it was believed to be the direct outcome of sin, 'flagellum Dei pro peccatis mundi,' to use Cotton Mather's phrase, and the treatment was simple—a readjustment in some way of man's relation with the invisible powers, malign or benign, which had inflicted the scourge. From the thrall of this 'sin and sickness' view man has escaped so far as no longer, at least in Anglo-Saxon communities, to have a proper saint for each infirmity. Against this strong bias towards the supernatural even the wisdom of Solomon could not prevail; was not the great book of his writings, which contained medicine for all manner of diseases and lay open for the people to read as they came into the temple, removed by Hezekiah

lest out of confidence in remedies they should neglect their duty in calling and relying upon God? And the modern book of reason, which lies open to all, is read only by a few in the more civilized countries. The vast majority are happy in the childlike faith of the childhood of the world. I am told that annually more people seek help at the shrine of Ste. Anne de Beaupré, in the Province of Quebec, than at all the hospitals of the Dominion of Canada. How touching at Rome to see the simple trust of the poor in some popular Madonna, such as the Madonna del Parto! It lends a glow to the cold and repellent formalism of the churches. In all matters relating to disease credulity remains a permanent fact, uninfluenced by civilization or education.

(*b*) From Hippocrates to Hunter the treatment of disease was one long traffic in hypotheses; variants at the different periods of the doctrine of the four humours, as dominated by some strong mind in active revolt it would undergo temporary alteration. The peccant humours were removed by purging, bleeding, or sweating, and until the early years of the nineteenth century there was very little change in the details. To a very definite but entirely erroneous pathology was added a treatment most rational in every respect, had the pathology been correct! The practice of the early part of the last century differed very little from that which prevailed in the days of Sydenham, except, perhaps, that our grandfathers were, if possible, more ardent believers in the lancet.

(*c*) In the past fifty years our conception of the nature of disease has been revolutionized, and with a recognition that its ultimate processes, whether produced by external agents or the result of modifications in the normal metabolism, are chemico-physical, we have reached a standpoint from which to approach the problems of prevention and cure in a rational way. Let me indicate briefly the directions in which the new science has transformed the old art. [68]

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Highest aim not cure, but prevention of disease.

In the first place, the discovery of the cause of many of the great scourges has changed not only its whole aspect, but, indeed, we may say, the very outlook of humanity. No longer is our highest aim to cure, but to prevent disease; and in its career of usefulness the profession has never before had a triumph such as we have witnessed in the abolition of many fearful scourges. Great as have been the Listerian victories in surgery, they are but guerrilla skirmishes, so to speak, in comparison with the Napoleonic campaigns which medicine is waging against the acute infections. These are glorious days for the race. Nothing has been seen like it on this old earth since the destroying angel stayed his hand on the threshing-floor of Araunah the Jebusite. For seventeen years [1919] Cuba, once a pest-house of the tropics, has been free from a scourge which has left an indelible mark in the history of the Englishman, Spaniard, and American in the New World. To-day the Canal Zone of Panama, for years the graveyard of the white man, has a

death-rate as low as that in any city of the United States. In the island of Porto Rico, where many thousands have died annually of tropical anaemia, the death-rate has been cut in half by the work of Ashford and others. But, above all, the problem of life in the tropics for the white man has been solved, since malaria may now be prevented by very simple measures. These are some of the recent results of laboratory studies which have placed in our hands a power for good never before wielded by man.

Secondly, a fuller knowledge of etiology has led to a return to methods which have for their object, not so much the combating of the disease germ or of its products, as the rendering of conditions in the body unfavourable for its propagation and action. . . .

Thirdly, the study of morbid anatomy combined with careful clinical observations has taught us to recognize our limitations, and to accept the fact that a disease itself may be incurable, and that the best we can do is to relieve symptoms and to make the patient comfortable. The relation of the profession to this group, particularly to certain chronic maladies of the nervous system, is a very delicate one. It is a hard matter, and really not often necessary (since Nature usually does it quietly and in good time), to tell a patient that he is past all hope. As Sir Thomas Browne says, 'It is the hardest stone you can throw at a man to tell him that he is at the end of his tether,' and yet, put in the right way to an intelligent man it is not always

cruel. Let us remember that we are the teachers, not the servants, of our patients, and we should be ready to make personal sacrifices in the cause of truth, and of loyalty to the profession. Our inconsistent attitude is, as a rule, the outcome of the circumstance that of the three factors in practice, heart, head, and pocket, to our credit be it said, the first-named is most potent. How often does the consultant find the attending physician resentful or aggrieved when told the honest truth that there is nothing further to be done for the cure of his patient! To accept a great group of maladies, against which we have never had and can scarcely ever hope to have curative measures, makes some men as sensitive as though we were ourselves responsible for their existence. These very cases are 'rocks of offence' to many good fellows whose moral decline dates from the rash promise to cure. We work by wit and not by witchcraft, and while these patients have our tenderest care, and we must do what is best for the relief of their sufferings, we should not bring the art of medicine into disrepute by quack-like promises to heal, or by wire-drawn attempts to cure in what old Burton calls 'continuate and inexorable maladies.'[68]

♂

Not nihilism, but active scepticism necessary.

Fourthly, the new studies on the functions of organs and their perversions have led to most astonishing results in the use of the products of metabolism, which time out of mind physicians have employed as medicines. Pliny's *Natural History* (Bohn, London, 1855–7, vol. ii, p. 291) is a storehouse of

information on the medicinal use of parts of animals or of various secretions and excretions. Much of the humbuggery and quackery inside and outside of the profession has been concerned with the use of the most unsavoury of these materials. . . .

But the best of human effort is flecked and stained with weakness, and even the casual observer may note dark shadows in the bright picture. Organotherapy illustrates at once one of the great triumphs of science and the very apotheosis of charlatanry. One is almost ashamed to speak in the same breath of the credulousness and cupidity by which even the strong in intellect and the rich in experience have been carried off in a flood of pseudo-science. This has ever been a difficulty in the profession. The art is very apt to outrun the science, and play the master where the true rôle is that of servant. . . .

Not alone in pneumonia, but in the treatment of certain other diseases, do we need a stern, iconoclastic spirit which leads, not to nihilism, but to an active scepticism—not the passive scepticism born of despair, but the active scepticism born of a knowledge that recognizes its limitations and knows full well that only in this attitude of mind can true progress be made. I hope to live to see a true treatment of pneumonia. Before long we should be able to cope with the products of the pneumococci; and it may indeed come within the list of preventable diseases. . . .[68]

♁

Fighting faith of the

And then we doctors have always been a simple, trusting folk! Did we not believe Galen implicitly

for 1,500 years and Hippocrates for more than 2,000? In the matter of treatment the placid faith of the simple believer, not the fighting faith of the aggressive doubter, has ever been our besetting sin. [68]

aggressive doubter should be cultivated.

♁

The organization about which I propose to speak . . . is a process by which the individual is helped to get the most out of himself, and by which he can do the greatest possible amount of good in the community. . . . Than medical practitioners no men need more acutely the benefits of co-operation, and yet they are notoriously difficult units to unite. Once split off from the parent college or school, a majority of practitioners live lives of isolation, often indeed of great loneliness. Even in a city a very busy man may see surprisingly little of his colleagues, and what is worse he may desire to see still less. A man mentioned to me the other day that sometimes a month passed in which he did not exchange a word with a fellow practitioner. Living a buried life his motto is of necessity that of Descartes, *Qui bene latuit bene vixit.* Men react very differently to this seclusion and restraint; the best find all they ask in the intense human interest of the daily round, and against much drudgery and more discouragement they place in the balance much affection and more gratitude. It is in the very nature of the work of the medical man that he love himself last. . . . In the three great professions, the lawyer has to consider only his head and pocket, the parson the head and the heart, while with us,

Organization.

head, heart, and pocket are all engaged. . . . Of the value to the local practitioner of a medical society and of a library we are all agreed. . . . It is the most important single factor in the promotion of that unity and good-fellowship which adds so much to the dignity of the profession. . . . Everything depends upon the influence of the seniors, whose attitude of mind determines whether the young men grow up in a state of wretched discord or in one of pleasant comradeship. I have known a clever old Shimei, of a quarrelsome disposition, ruin the profession of a city for a generation; on the other hand, a strong old man with a good heart and a smooth tongue may keep the peace, even among Ishmaelites.[69]

Keep up the high standard.

Two things remain, on your part, to keep up the high standard you have set with the steady energy of men who have faith in the future of scientific medicine and faith in their own powers to help in its progress. By your enthusiasm and unselfish devotion to the best interests of the profession you should stimulate the production of good work elsewhere. . . . The record you have made is unique in the history of medicine in America, but it should not be so for long. . . . There is the bounden duty to maintain an incessant watchfulness lest complacency beget indifference, or lest local interests should be permitted to narrow the influence of a trust which exists for the good of the whole country.[70]

To have enshrined your gracious wishes in two goodly volumes appeals strongly to one, the love of whose life has been given equally to books and to men. A glance at the long list of contributors, so scattered over the world, recalls my vagrant career—Toronto, Montreal, London, Berlin, and Vienna as a student; Montreal, Philadelphia, Baltimore, and Oxford as a teacher. Many cities, many men. Truly, with Ulysses, I may say, 'I am a part of all that I have met.' **Receiving anniversary volumes.**

Uppermost in my mind are feelings of gratitude that my lot has been cast in such pleasant places and in such glorious days, so full of achievement and so full of promise for the future. Paraphrasing my lifelong mentor—of course I refer to Sir Thomas Browne—among multiplied acknowledgement I can lift up one hand to Heaven that I was born of honest parents, that modesty, humility, patience, and veracity lay in the same egg, and came into the world with me. To have had a happy home, in which unselfishness reigned, parents whose self-sacrifice remains a blessed memory, with brothers and sisters helpful far beyond the usual measure—all these make a picture delightful to look back upon. . . .

And to a larger circle of men with whom my contact has been through the written word—to the general practitioners of the English-speaking world—I should like to say how deeply their loyal support has been appreciated. Nothing in my career has moved me more, pleased me more, than to have received letters from men at a distance—

men I have never seen in the flesh—who have written to me as a friend.[53]

♁

Quotations.

'Experience is fallacious and judgement difficult.'
Hippocrates, *Aphorisms* i.

'And I said of medicine, that this is an art which considers the constitution of the patient, and has principles of action and reasons in each case.'
Plato, *Gorgias*.[72]

♁

'The fixed period.'

To this edition (second edition of *Aequanimitas*) I have added the three Valedictory Addresses delivered before leaving America. One of these—'The Fixed Period'—demands a word of explanation. 'To interpose a little ease,' to relieve a situation of singular sadness in parting from my dear colleagues of the Johns Hopkins University, I jokingly suggested for the relief of a senile professoriate an extension of Anthony Trollope's plan mentioned in his novel, *The Fixed Period*. To one who had all his life been devoted to old men, it was not a little distressing to be placarded in a world-wide way as their sworn enemy, and to every man over sixty whose spirit I may have thus unwittingly bruised, I tender my heart-felt regrets. Let me add, however, that the discussion which followed my remarks has not changed, but has rather strengthened my belief that the real work of life is done before the fortieth year, and that after the sixtieth year it would be best for the world and best for themselves if men rested from their labours.[73]

I have an enduring faith in the men who do the routine work of our profession. Hard though the conditions may be, approached in the right spirit—the spirit which has animated us from the days of Hippocrates—the practice of medicine affords scope for the exercise of the best faculties of the mind and heart. That the yoke of the general practitioner is often galling cannot be denied, but he has not a monopoly of the worries and trials in the meeting and conquering of which he fights his life's battle; and it is a source of inexpressible gratification to me to feel that I may perhaps have helped to make his yoke easier and his burden lighter.[73]

The men who do the routine work of our profession.

♁

There was a famous paradox in antiquity—a grain of wheat falls noiselessly to the ground, the same thing happens with the second, the third, the fourth, and so on, for the thousands of grains that make up a bushel. But collect the grains again, and drop the whole bushel, and behold! a great noise. It seems difficult to explain how the sum of many thousands of silences could result in one great sound.

'In quietness and in confidence will be your strength.'

The silent unit, the single grain, will win the war. In this world-crisis it is the spirit of the individual worker—in trench or camp, factory or farm—that keeps the mouth shut, the heart fixed, and the hand steady.

The call is for silent sacrifice, of time, of habits, of comforts, of friends, and of those dearer than life itself—the sacrifice of sanctification in the old Hebrew sense. It has come. Do we not feel in

our heart of hearts that only a rich anointing of the spirit of the Fathers could have so stirred the Empire from the centre to the circle? My blood was thrilled the other day by the Honour Roll of the Consumers' Gas Company of Toronto—386 men at the colours from one corporation, of whom twenty-five have been killed, thirty-seven wounded, and eight taken prisoners! Why? The answer is in the words of the Prophet-Poet of Greater Britain:

> 'Because ye are Sons of the Blood, and call me Mother still.'

Let this message be heard above the din of battle and the clash of machinery, the silent unit will win:

> 'In quietness and in confidence will be your strength.'[71]

L'ENVOI

I have had three personal ideals. One to do the day's work well and not to bother about to-morrow. It has been urged that this is not a satisfactory ideal. It is; and there is not one which the student can carry with him into practice with greater effect. To it, more than to anything else, I owe whatever success I have had—to this power of settling down to the day's work and trying to do it well to the best of one's ability, and letting the future take care of itself.

The second ideal has been to act the Golden Rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care.

And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief came to meet it with courage befitting a man.

What the future has in store for me I cannot tell—you cannot tell. Nor do I care much, so long as I carry with me, as I shall, the memory of the past you have given me. Nothing can take that away.[74]

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